

THE ARCHITECTURAL REVIEW VOLUME CXXII NUMBER 711 DECEMBER 1952 FIVE SHILLINGS

# FOR PROTECTING OPENINGS

## PROPERLY

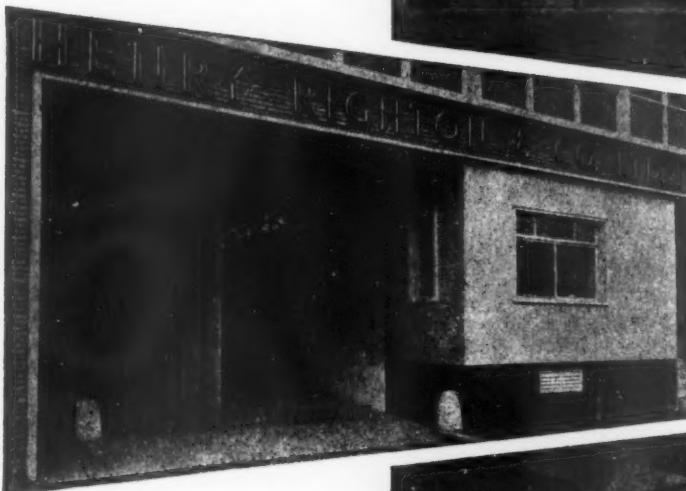
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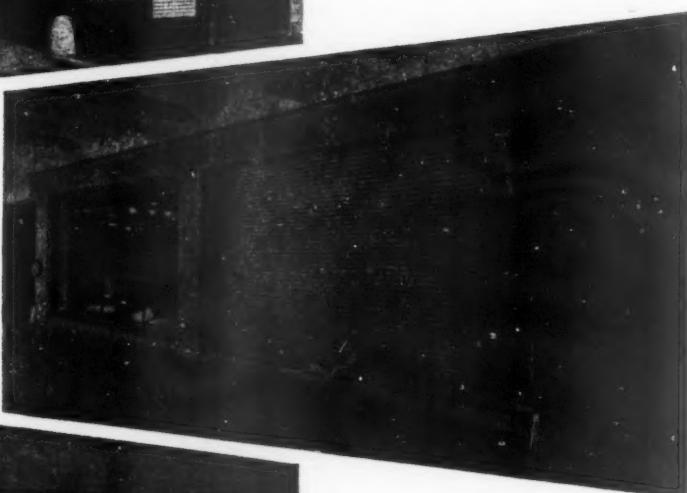
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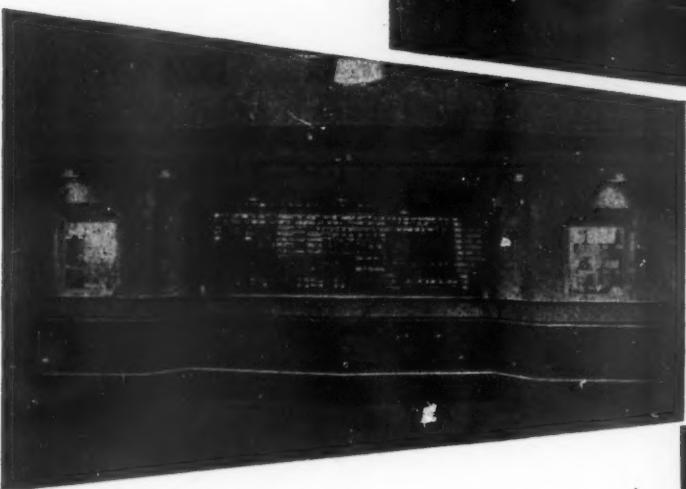
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## MARGINALIA

### Antwerp Bouwcentrum

Those who have abandoned hope of ever finding sermons in stones, books in running brooks, may yet find an encyclopaedia in standardized building-materials and components at the newly-announced Building Centre at Antwerp, which has been envisaged as 'une espèce d'encyclopédie du Bâtiment sous forme tangible' intended to initiate the visitor into both the 'qualités réputées des matériaux classiques' and, in the inevitable phrase, 'les dernières réalisations de la technique moderne.' The tangible form of this encyclo-



1

paedic structure does not yet seem to be fully settled, but sketches by the architect, Renaat Braem, all show a covered way, 1, leading between administration buildings and a vertical feature bearing a suitable emblem, down to a run of exhibition buildings distributed diagonally across the centre of the site, and terminating in a last pavilion which closes the forecourt and stands on the same building line as the roadward gable of the administration block.

### ICA at 10, E. C. Gregory at 70

Although the (London) Institute of Contemporary Arts has no precise foundation date, the body founded to sponsor and create it, Living Arts Ltd., was incorporated on July 22, 1947, and the Institute can reasonably see itself as ten years old at the end of 1957. It has been a turbulent decade in all the arts, and the ICA has contrived, throughout the period, to be somewhere near the point of maximum upheaval. In the late forties, when pre-war outlooks and programmes, having matured in cask (so to speak), seemed as generally palatable as they were heady, six hundred persons turned up to hear Ernesto Rogers, Cor van Eesteren and others in a discussion on *Painting, Architecture and Sculpture*, organized jointly with the Mars Group, and almost as many to hear Lucia Moholy to speak of her late husband, the great *Bauhausler*, Moholy Nagy. At the ICA, as elsewhere, this period reached its apogee in Festival year, the supreme point being, perhaps, Le Corbusier giving a little address on behalf of delegates to Hoddesdon CIAM congress, among the programmatic asperities of the exhibition *Growth and Form*, the last celebration (at the ICA at least) of the tidy, Platonic view of the universe as mathematical.

Already the pressure of post-war realities was being too sharply felt for such dream-worlds to persist, and

just a year later began J. M. Richards's series of visits and discussions about current London architecture, that was ultimately to range over material as diverse as Bankside Power Station, Harlow New Town, the Time-Life building and the Pimlico development, and bring a number of architects to the bar of a tribunal that could be far more frank and far less discreet than the periodical press. The 'Unknown Political Prisoner' memorial competition, won by an architect-sculptor, Reg Butler, found the ICA marginally exposed to the embarrassments of the Cold War, on an international scale, and in 1953, the 'Brutalists' exhibition *Parallel of Life and Art*, saw the beginning of a hot war on the aesthetic plane that has enlivened much subsequent ICA activity, and has erupted in such forms as pioneer studies in the popular arts and mass media, in 1953-4, an interest 'damned' as subtopian by one faction during the ICA discussion on the vexed subject of aesthetic control in town planning, in 1957. Threaded through this running debate have been a series of major exhibitions, some of them showpieces like Richard Hamilton's *Man, Machine and Motion*, others more straightforward gallery exhibits of Henry Moore drawings, the work of the great Brazilian gardener, Roberto Burle Marx, Olivetti design; of lectures, by speakers as diverse as Lewis Mumford, Maxwell Fry, Siegfried Giedion, R. Furneaux Jordan, Tomas Maldonado; of showings of comprehensive colour-slide reviews of the work of Le Corbusier and Buckminster Fuller, and films by Charles Eames.

At the head of the impressive roster of signatories to the memorandum instituting Living Arts in 1947 there appeared, very properly, the name of E. C. Gregory, universally known as Peter Gregory. One of the most tireless and effective workers for the promotion of contemporary art, he celebrated his seventieth birthday at the beginning of October. The centre of his activities has always been the publishing house of Lund Humphries, that has issued, under his guidance, standard works on Henry Moore, Ben Nicholson and Barbara Hepworth, a lavish report on the CIAM congress at Hoddesdon, mentioned above, Arthur Korn's *History Builds the Town*, Victor Fuerst's controversial book on Wren, and many others. Of Moore and Nicholson, as well as Eduardo Paolozzi and other rising talents, he is also a notable collector, and his further involvement with the visual arts includes the establishment of Ganymede Prints on British soil. His most lasting monument, apart from the ICA (which will survive its present difficulties as it has survived previous ones, by rallying its supporters), will undoubtedly be the Gregory Fellowships, at the University of Leeds, which make it possible for a sculptor, a painter and a poet to contribute to the life of the university, while enjoying, for the period of their tenancy, a welcome respite from the pressures of the London art world, and an opportunity to work in peace.



### I.L.A. Conference

The Institute of Landscape Architects held a conference at Newcastle-on-Tyne in September which was primarily concerned with the reclamation of waste land on the same lines as the recent series of articles in the REVIEW. Many of the papers read are published in *Planning Outlook*, Vol. 4, No. 3.

In tours round the Three Rivers Region members experienced the visual impact of dereliction in all its varied forms, saw the old 'Gibraltars' made of coal and slag now eroded and weathered into forms of strange attractiveness, the evolution of new tips—one was reported to be 150 feet high by 2,000 feet long—saw for themselves the confusion of transmission lines, open-cast coal sites, subsidence areas, trees and grass affected by atmospheric pollution. They also saw some of the many attempts at reclamation, the new industrial estates on abandoned chemical waste lands, the open-cast areas returned to agriculture, tips now planted and green, the new housing sites and recreation areas on reclaimed land.

As had been said often enough, what is needed in this region is an over-all landscape plan. One which might co-ordinate the efforts of such progressive local authority planning departments as those of Durham, Lancashire and the West Riding and one, too, into which new reclamation schemes can be keyed. But more than that we must make up our minds what this plan might say and be clear-headed about ends as well as means. These are two separate but interacting problems. The first implies scale and the second attitudes of mind. As far as scale is concerned it is obvious that the humanized agricultural landscape as created in the eighteenth and early nineteenth centuries cannot survive the twentieth century industrial unit. And because of this it might be tempting to think about a new landscape of power, owing nothing to the eighteenth century tradition. But though visually exciting, the realization of this conception would be disastrous. What should be fought for is a master plan which will re-establish the right and humane relationship between man and the landscape as was done, for example, by TVA. The tremendous possibilities are a challenge which it is to be hoped will be accepted.

### Processional Tomb

With most other media of monumentality forbidden him by the general embargo on figurative decoration, the architect of today, faced with the problem of designing a monument, tends more and more to aim at generating monumental emo-



tions by means of sequences of spaces, through which the visitor is directed to proceed processional by the nature of the plan. One of the first to be so designed, though one of the latest to be completed, is the Rothschild mausoleum on Mount Carmel, Israel, designed in the late 'thirties by Uriel Schiller. In it, the visitor, having traversed an elaborately laid-out garden, approaches the mausoleum proper by a sequence of spaces consisting of a polygonal courtyard outside the main gate, a square court whose floor is islanded by water, an ante-chamber reached by descending steps, and a curved passage—part of this sequence is seen in reverse order in 2, from the passage. By this point the visitor is below ground level, and enters the tomb-chamber directly, the double sarcophagus confronting him in a plain niche, 3, in the walls of sandblasted concrete.

### Sunshades of Singapore

Far too little notice is taken in Britain of the tropical architecture being designed by British architects in the Far East, and while more spectacular buildings—of undeniable merit—have attracted the limelight to other parts of the Commonwealth, the architects of Singapore in particular, working mostly in the field of large-scale residential work that leaves little margin for elaboration or exhibitionism have begun to achieve a workable tropical vernacular that is a valuable addition to the body of Commonwealth architecture. The sunshades and fenestration of the Nurses' hostel for Singapore General Hospital, for which the architect was K. A. Brundell, are a case in point, 4. The building has a concrete frame and the main sun-shading element is, as it were, the edge of the floor slab, turned down to throw off rain-water. But from



floor to ceiling, and from column to column, the walling consists entirely of louvred panels and shutters, handled and detailed in a manner that is as elegant as it is unselfconscious—a living example of the Functional Tradition at work.

#### Architectural Historians in Piedmont

Piedmont was familiar ground for the 'Grand Tourist' of the seventeenth and eighteenth centuries. Prof. Wittkower found, for instance, that Lord Burlington borrowed the steps leading up to his Palladian villa at Chiswick from the Palace of Racconigi which he had passed on the way. And Richard Lassels, the seventeenth century traveller, describing the journey via Mont Cenis as the easiest way into Italy, gives an admiring account of Turin. Nowadays that has changed and Piedmont has become a rather neglected region in spite of its superb and varied landscape embracing alpine glaciers, slopes covered by chestnut and acacia trees, and many lakes, small and big. Its superbly interesting architecture ranges from Roman and early mediaeval to Olivetti at Ivrea (see AR, June, 1957). Thus this province was rather a good hunting ground for the participants of the First International (and the 10th national) Congress of Italy's architectural historians under the chairmanship of Prof. M. Salmi.

The mediaevalist could discuss the controversial date of the atrium of the cathedral of Casale Monferrato on the spot and visit Staffarda founded as a Cistercian abbey in the twelfth century, much of it in its pristine state, and the Abbey of

Vezzolano full of interest for the iconographer, and both with innumerable riddles concerning the dates of re-used capitals. The late mediaeval castles of the Val d'Aosta, like Fenis or Issogne, give a unique view of domestic life and buildings of that period.

Whoever wants to study the seventeenth-century conception of a Gothic interior should visit the cathedral of Asti which was frescoed all over, walls and vaults, by Carlo Carbone in such a manner that one can hardly tell from below where Gothic construction ends and Baroque painting begins. The best known and the most important buildings are, of course, those of the seventeenth and eighteenth centuries. It must have been the *genius loci* of Piedmont which first made Guarino Guarini, a native of Modena, be called to Turin. He was followed by Filippo Juvarra, who when he left his native Messina for Turin was a finished architect who had found and fully developed his style (this was proved in a lecture by Prof. Maria Accascina) when he came to Turin.

Vittone, the last of the triumvirate and the last to gain fame, was Piedmontese by birth; by now his churches at Bra and Chieri, dazzling constructions on centralized plans, are well known. But there are other architects too who deserve mention, e.g. Alessandro Vitozzi, to whom the first design of the staggering Santuario di Vicofoote near Mondovi is due, and F. Gallo, who amongst other churches built its cupola, 5, claimed to be the largest elliptical dome in existence. Generally speaking, nowhere else has the beholder to crane his neck so much and so often to look upwards to hovering domes of fantastic construction or painted perspectives, 6 (San Gaudenzio, Novara). Even the student of nineteenth century architecture, who is richly rewarded, has to gaze upwards whether inside or

outside of Antonelli's cupola to the same San Gaudenzio, 7 and 8.

There is one general feature in Piedmont's architecture which ought to be mentioned, and that is a certain lack of conformity to rules; motifs like a Palladian window appear, e.g. in San Paolo in Casale Monferrato, 9, in the middle of a facade or elsewhere are inserted in the top storey of a campanile; another campanile, in Carignano, 10, displays a highly unorthodox collection of motifs. There are towers and gates which look wholly 'all Inglesi'. Thus the English architect or dilettante receiving his first impression of Italian architecture from Piedmont might well have been greatly impressed by it and take it for the real stuff.

#### CORRESPONDENCE

##### House at Watford

To the Editors,

SIRS.—When I look at the illustrations of the absurd little house in suburban Watford shown in your September issue and read the even more absurd apology for it supplied by the architects, Alison and Peter Smithson, I am forced to the conclusion that the devotees of the new aesthetic mysteries are prepared to go to any lengths of silliness in order not to seem to be as other men are. Mr. and Mrs. Smithson may well be sick and tired of the sight of the speculative builders' solutions of this commonplace problem—so am I, but it seems to me, that in their efforts to avoid doing the same they have done not better, or even as well, but worse! Now I cannot think that this is because they are lacking in ability. Can it be then that they are not equipped with sound theory, which makes them go so wildly wrong?

Yours, etc.,  
NORMAN HARRISON,  
London, S.W.13.

#### Curtain Walls

To the Editors,

SIRS.—I note with interest that there are several kinds of glass curtain wall but in practice I have seen only the type which appears to be a man-decked sandwich of alternate glass and primary colour. A new flat-faced factory in Birmingham is exactly the same as the comprehensive school at Great Barr. There is, at first sight, a crude stimulus from these new structures standing out from their darker surrounds like the vivid hat and scarf of a Jamaican lady.

They owe this excitement to the contrast they provide against older buildings, but if a whole district or a city was consistently in this style (as Bath is consistently eighteenth century) the result would merit an issue of 'Outrage' all to itself.

Why should primary colours bash us across the head from these curtain walls? It is time that somebody used a decorative *form* rather than this cheap and un-English use of strong colour.

Yours, etc.,  
R. G. BROADHURST,  
Kings Norton, Birmingham.

**Architect of the TUC Memorial Building** (pages 370-388), David du R. Aberdeen was born in 1913 and trained at the Bartlett School of Architecture. Practice commenced 1937, won Watford Fire Station open competition in same year. Practice resumed after war as planning and design architect for the Brabazon Hangar, Filton. Has designed general hospital for Northern Ireland; university buildings—botany and zoology laboratories and halls of residence; offices; factories; housing areas and flats in several of the New Towns. Current work includes headquarters of international banking house in City and multi-storey flats.

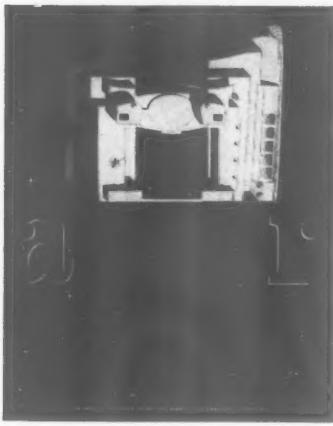
#### ACKNOWLEDGMENTS

The colour block on page 407 appears by courtesy of Frederick Gibberd.

**COVER**, David Aberdeen. **MARGINALIA**: 4, Douglas C. Pike; 5-10, S. Lang. **TUC MEMORIAL BUILDING**, pages 370-388; Woburn Studios 1, Colin Westwood 4, 10, 11, 12, 16, 17, 22, 27. David Aberdeen 5; remainder Toomey, Arphot. **STREET LIGHTING**, pages 389-394: 6, 22-26, Toomey, Arphot; 4, General Electric Co.; 5, Poles Ltd., Birmingham; 15 and 16, Hobbs, Ofen & Co. **BRASILIA**, pages 395-402: 1, Carlos Bothelo. **CANOVA**, pages 403-6: 1 and 3, by gracious permission of Her Majesty the Queen; 2, by courtesy of Messrs. Wildenstein; 4, Devonshire Collection, Chatsworth, by permission of the Trustees of the Chatsworth Settlement. **CURRENT ARCHITECTURE**, pages 407-410: 1-5, Wainwright. **MISCELLANY**, pages 411-418. **Functional Tradition**: Nairn, Arphot. **History**: 1, 2, 4, 6, 8. **Foto Gauss**, Stuttgart. 3, Lossen & Co. 5, 7, 9. S. Lang. **Exhibitions (Triennale)**: Nairn, Arphot. **Interbau**: **Keystone (Painting and Sculpture)**: 3, **Sport and General Press**, 4, Galen Sayers; 5, Beaux Arts Gallery. **SKILL: Interiors**, pages 419-423: Showrooms in Wigmore Street, Stereograms Ltd. and Peter Cracknell; **Garden Centre in Wigmore Street**, John Maitby. **Techniques**, pages 423-430, Toomey, Arphot.



# THE ARCHITECTURAL REVIEW



**This month's cover** ponders the seen and unseen aspects of the recently completed TUC Memorial Building. The plan view of any structure is a kind of professional secret shared between the architect and the building itself, glimpsed by an occasional air traveller, but never seen, and rarely appreciated, by those who use the building as it was designed to be used. The enquiring visitor may possibly be able to enjoy a sight of the rooflights of the conference hall, from a nearly vertical viewpoint, but otherwise the plan and the planning can only be appreciated from drawings, illustrations, and descriptions, such as appear, in the case of this particular building, on pp. 370-388.

363 **Marginalia**

364 **Correspondence**

366 **Frontispiece**

367 **John Britton by Peter Ferriday** As the nineteenth century began, topographical writing in England underwent an almost total revolution, and changed from an amateurish technique for flattering local pride and piety, to a professional discipline with pretensions to rational method and historical accuracy. The man who initiated, and largely accomplished this revolution, was John Britton, whose two volumes on Wiltshire, his native county, appeared in 1801, and launched him on a career that was ultimately to see most of Britain, and its ancient monuments, described and illustrated, often at a comfortable profit to himself and his partners. Mr. Ferriday describes the methods and career of this pioneer topographer, and makes an appraisal of the quality of the various illustrators who worked for Britton, among them John Martin and the elder Pugin.

370 **TUC Memorial Building Architects: David du R. Aberdeen and Partners**

**Directing Editors** J. M. Richards  
Nikolaus Pevsner  
H. de C. Hastings  
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**Executive Editor** Ian McCallum  
**Art Editor** Gordon Cullen  
**Technical Editor** Lance Wright

**Assistant Editors** research, S. Lang, literary, Reyner Banham. Editorial Secretary Whi 0611-9

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## 389 **Street Lighting by Gordon Cullen**

Quite apart from such problems as the design of the equipment involved, street lighting raises townscape problems of a broader sort, concerned with the siting of that equipment and the distribution of the light it produces. In both these matters the townscaper and the lighting engineer are likely to find themselves in direct opposition, because the codes of practice governing the height of lamp-stands, and the aim of even lighting (implicit in the theory of Silhouette Vision) both tend to produce a set of stock answers to all problems, irrespective of their location. Street lighting thus tends to become yet another agent of standardized Subtopia. Yet, as Mr. Cullen points out, the engineer, who normally insists on rigid conformity to standard practices, is the very man who can assist the townscaper seeking to enhance or maintain the specific character of a place, because he knows precisely what variations from standard, and other flexibilities of design, are possible with the equipment currently available, or will be possible with the equipment that will soon render Silhouette-Vision theory obsolescent.

## 394 **Brasilia by William Holford**

As if to crown its internationally-celebrated achievements in architecture, Brazil is now proposing to implement legislation laid down some years ago, and create a new administrative and governmental capital city for half-a-million inhabitants on a virgin site in the up-country state of Goiás. The project has been entrusted to Brazil's new generation of architects from the start: Oscar Niemeyer is in overall architectural control, and the competition for the master-plan has been won by Lucio Costa, whose proposals are as bold and original as the project requires. Sir William Holford, who was a member of the jury for this competition, and thus speaks with inside knowledge, indicates the background and conditions of the project, and discusses the aims and approach of the Costa proposals, which are further expounded in the first full English translation of Costa's report, which appears on the pages following Sir William's article.

## 403 **Canova and the English by F. J. B. Watson**

The part played by English artists and amateurs in the creation of the Neo-Classical movement at its original focus, in Rome, and in its subsequent development, was of considerable importance, but subsequently it has been largely ignored. In the case of Antonio Canova, whose bicentenary falls this year, there was some change of opinion, and although this sculptor of European standing was not much patronized or visited by the English in his youth, he became, after the Napoleonic Wars were over, a magnet for Englishmen abroad, and

the recipient of distinguished patronage, including that of the Prince Regent. Mr. Watson, one of England's leading Neo-Classical scholars and the author of an article on Flaxman which appeared in the REVIEW in 1955, gives the fullest chronicle ever printed of the English interest in Canova, drawn from contemporary memoirs, correspondences and diaries, and illustrated with unpublished photographs of Canova's work in the Royal collections.

## 407 **Current Architecture**

### Miscellany

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### Skill

## 419 **Interiors: Showrooms in Wigmore St., W.1 Designer: Julian Green**

## 422 **Garden Centre in Wigmore St., W.1 Designer: F. M. Gross**

## 423 **Techniques: TUC Building by Lance Wright**

Not only is it remarkable by virtue of being one of the mere handful of substantial public buildings erected in Britain since the war, but the TUC Memorial Building is also noteworthy for the very high standard of its finishes, trim and equipment, both in the materials employed and the care exercised in their choice and design. Since opportunities to work so lavishly have been very rare in the past decade, it has been felt proper to devote a whole article to these aspects of the building alone.

## 430 **The Industry**

### 432 Contractors

**Author:** William Graham Holford: apprenticed in South Africa before taking the five-year course at Liverpool under Charles Reilly. Contemporary of Gordon Stephenson, Denis Harper, Bryan Lewis and other professors. Spent a year with Voorhees, Gemmill and Walker, New York. Rome Scholar 1930. Lecturer and then Professor of Civic Design at Liverpool. Planned and built for the Special Areas Commissioner until 1939. Organized Ministry of Supply Office for factories and hostels. Headed technical division, Ministry of Town and Country Planning. Now Professor of Town Planning, University College, London.

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THE ARCHITECTURAL REVIEW

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FIVE SHILLINGS



This masterly composition of elementary geometrical solids is a model of the parliament buildings by Oscar Niemeyer for Brazil's new capital city, Brasilia. Behind the broad platform is the secretariat and service building, and on the platform itself stand the Senate and the Chamber of Deputies. But, though Niemeyer will design other buildings, the overall town-plan has been entrusted to Lucio Costa, and his proposals are described by Sir William Holtord on page 395.





## JOHN BRITTON 1771-1857

Topographical literature had a venerable and voluminous past by 1800. The form of the county histories—the most popular vehicles of topographical and antiquarian lore—had not changed much since the mid-eighteenth century. The church—its monuments, heraldry, incumbents, value as a living in the reign of Henry VIII—the Family and their Seat—in the luxurious volumes genealogical tables thrown in—a general and not well informed account of the history and geography, that constituted a county history.

These massive two, three, or four volume works, sometimes badly, never more than pleasantly illustrated, make unrewarding reading and must always have done so. They flattered the vanity of the owners of the Seats but although they vary in merit, the interest is very limited. Though the authors trudged from village to village with admirable industry and piety they usually forgot to carry their wits along with them. These county histories were subscription books—half down and half on receipt of the book. The plates of the Seats were paid for, very properly, by the owners. In short they were not commercial ventures but private speculations involving authors, booksellers and patrons. One thing can be said of all these early topographers, they none of them got a penny piece out of the work. A clever Wiltshireman was to show that there was money in topography and antiquity if you knew how to set about it.

John Britton was born in 1771 at Kingston St. Michael. His father was a baker, shop-keeper, and small farmer, quite inefficient and going down in a county that was a proto-Depressed Area. Britton recorded that he was as a boy inquisitive, ambitious, emulous, sensitive and uneducated. He went to local schools and to a Chippenham one but learnt very little, though of course he had read his *Pilgrim's Progress* and *Robinson Crusoe*. After his schooling he helped in the bakery and yearned. In 1787 an uncle on his mother's side took him to London, apprenticed him to the Jerusalem Tavern, Clerkenwell Green, to learn the 'whole art and mystery of a wine merchant,' and then forgot about him. The unfortunate boy spent the next years of his life in a cellar and in the odour of wines and spirits. The art and mystery part of the profession was bogus.

Britton was befriended by various artist-craftsmen, and through William Essex met another apprentice (learning the whole art and mystery of enamelling), Edward Wedlake Brayley, a good and remarkable man. The two apprentices were determined to escape their bondage, and they looked to literature as the most likely way. Their first work was a ballad entitled *The Guinea Pig*, a skit on the powder tax and pigtails; they sold a thousand at a penny each, but a pirate cheated them out of more. In his twenty-

second year Britton gave up the wine cellar, walked to Wiltshire to propose, was rejected, walked on to Bath, walked back to London, and re-entered the wine cellar. From the cellar he went to a solicitor's office, and thence, and for good and all, to literature. As a frequenter of political and social clubs he had acquired an ability for public haranguing and was able to earn three pounds a week at a Panton Street pounds a week by reciting, singing and writing. He came to know the Dibbins, Grimaldi, Belzoni the 'Patagonian Sampson' at the time—the Egyptology came later), and many others. He took to regular journalistic hackwork, reviewing plays for the *Sporting Magazine* and wrote *The Life and Adventures of Pizarro, Kotzebue* having popularized this worthy. Inspired by the travels of Warner he began to take an interest in topography and came to know most of the London antiquarians and some of the architects, including Soane, Nash and Wyatt. Given the chance he was ready.

The *Sporting Magazine* was owned by John Wheble, and Wheble was looking for somebody to get him out of some difficulties. He had, as far back as 1784, when he lived in Salisbury, announced his intention of producing a topographical account of Wiltshire in two volumes and solicited subscriptions. The subscriptions to hand he turned his attention elsewhere. Conscience must have nagged him for in 1800 he asked young Britton to do the work for him. Britton's luck was in; for at about the same time a group of bookseller-publishers invited him and Brayley to edit a series of volumes to be called *The Beauties of England and Wales*. Though he knew little of topography, not much history and no architecture he undertook the jobs. He had to offer industry, intelligence, a good pair of legs, and the run of John Nichols's antiquarian library. He and Brayley walked Wiltshire.

The 1801 Wiltshire volumes were, as Britton later admitted, nothing to boast about, though considering the circumstances they could hardly have been better done. And they were done in a year, a fact which does something to explain Britton's success and to distinguish him from the old gang of amateurs. There were enough facts gathered to make it even today of some use to the writers of the Victoria County History but there was a great deal more padding. The theatrical declamation was put to good account in hiding the gaps. 'Happy, happy Britain! Well mayst thou be distinguished in the scale of nations, when the great ones of thy land disdain not to provide relief for the necessities of the indigent... Avert, oh Heaven! avert the gathering tempest! Let Plenty be re-established in our land, and peace once more re-visit our bleeding country.' (Britton added an immensely superior third volume in 1825—containing a John Martin drawing of Avebury

that would have warmed a Druid's heart—and did much for Wiltshire studies. It was he who discovered Aubrey and built up a valuable Wiltshire library.)

The *Beauties* was a very considerable piece of publishing and the proprietors must have been brave men to entrust it to such young and inexperienced editors. No one publisher (or perhaps more properly bookseller, for the distinction was not yet completed) could have provided sufficient capital for such an undertaking and the tried practice (Johnson's *Dictionary*) of a combine was invoked. Vernor and Hood were the publishers, but Longman & Rees, Cuthell & Martin, J. & A. Arch, W. J. & J. Richardson, J. Harris, and B. Crosby all took shares. There can be little doubt that Britton laid down the plan of the work and provided the general direction. The text of the earlier volumes was in the main written by Brayley, and Britton had recorded his own share; 'The principal travelling, correspondence, labour of accumulating books, documents, direction of draughtsmen, and engravers, and some other necessary vocations devolved on me.' The two editors made their first general tour in June, 1800, and the first part—the series went alphabetically, so it was Bedfordshire—appeared in April, 1801, and the three Bs were completed by the end of the year. That was professionalism. 1802 saw the production of the four C counties, the Isle of Man and Derby, and in 1803 the remaining three D counties, Essex and Gloucestershire. Although these early volumes were clearly written in haste they were pretty satisfactory in the main. The geography, history (Camden, etc.), markets, fairs, industry, population (the new fangled Census had just come), agriculture (the reports of Arthur Young and others), the poor (Eden) were regular features. There was system and expedition.

Seeing that tramping and searching through published material was not enough Britton devised quicker and better ways :

### Topographical History of WARWICKSHIRE

Having engaged to write a concise Topographical and Descriptive account of WARWICKSHIRE, for the Beauties of England, of which work the History of this County is to constitute part of the XVth volume, I am induced to trespass on your attention, and trust you will pardon the liberty. Desirous of rendering this Account accurate and satisfactory to the most intelligent Gentlemen of the County, I adopt this mode of interesting you to favour me with some information respecting the History, Antiquities, and present state of \_\_\_\_\_ and its neighbourhood. Should I not have an opportunity of paying my respects to you in person, during my tour through the County, I shall esteem it a

particular favour if you will address any communication to

Your Obedient Servant,  
J. BRITTON.  
Tavistock Place,  
London.

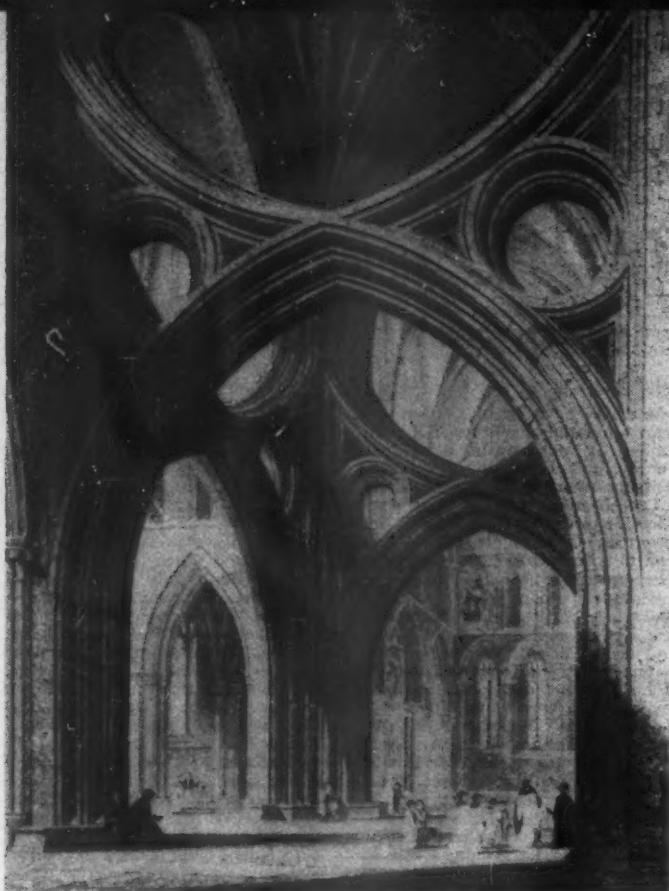
Thousands of such printed letters—very good advertising material—were no doubt dispatched to local antiquaries, clergymen, and denizens of Seats. Not surprisingly the volumes got fuller and fuller and the original plan had to be scrapped. The Kent beauties, written entirely by Brayley, ran to 900 pages, and the Middlesex volumes to about 8,800. By 1809 there was a steady sale of 8,500, a phenomenal achievement, and in spite of that another publisher found it worth while to run some of the counties in new editions only three or four years after the first publication.

In spite of the success the editors and publishers fell out. 'Angry contentions,' as Britton described them, became more frequent. The publishers wanted even quicker appearances but the main source of trouble was quite different. The editors wanted to put much greater emphasis on antiquities and architecture, the publishers insisted on 'seats and wood-scenery.' The differences were patched up until Hood died (Britton was on good terms with him) but when Harris succeeded as chief proprietor in 1811 Britton and Brayley were out. The series was completed by other hands in 1818 twenty-six volumes strong.

The *Beauties* are still very well worth attention and some of the illustrations of churches of great historic value. The two young editors had become masters of their trade.

Britton showed the drawings that the publishers thought unsuitable for the *Beauties* to Josiah Taylor, the leading architectural publisher and bookseller, and a new work was conceived. *Architectural Antiquities of Great Britain* was thoroughly advertised and Longman the greatest publisher of the time, took a third share. Britton was no mere editor but one of the publishers, owning the copyright himself and taking a share of the profits. (The copyright was, it will be seen, of some importance to him, and so was the fact that he was the owner of the drawings.) The first part of the *Antiquities* appeared in 1805, the volumes in 1807, 1809, 1812, 1814, and a supplementary volume with a separate title in 1827. The reviewers were kind with the exception of John Landseer, who was riled by Britton's obsequious dedications—'undulations of grovelling humility.' According to Landseer, Britton was a 'mere empirical pretender both in art and literature', and had a 'pompous manner of parading the little learning he possesses.' Landseer had 'a malignant and envious heart' noted Britton.

The value of the *Antiquities* lay in the illustrations. The day's of the poor cuts in the *Gentleman's Magazine*

1. Wells Cathedral from *Architectural Antiquities of Great Britain*.

were past—here were accurate and beautiful plates available to a large public for the first time. Many people, some to make their mark in the Gothic Revival, were to learn their rudiments from the parts of the *Antiquities*. The quality of the text was not high but by the time the last volume had been issued John Rickman (the 'Quack Quaker' Britton called him) had issued his ready reckoner dating device and his style terminology and this helped greatly in the search for accuracy. The span of the *Antiquities* covers the creation of a large body of Gothic lovers, and Britton's work has a unique place as a popularizer. The five volumes cost £17,092 to produce. It was not surprising that the plates were better than anything seen before, it was surprising that the work paid.

While the *Antiquities* were in progress Britton wrote five books with himself and Longman's as publishers and then set about a new series.

In the eighteenth century two first-rate studies had been written about two different cathedrals as well as many not so distinguished, but nobody had thought of covering all the cathedrals or at least nobody had had the resources to do so. Britton had the thought, and, with successes behind him, the resources.

The *Cathedral Antiquities of England* is still one of the most sought after sets of the ordinary, non-incunabulistic, non-Redouté book collectors. The collectors go for the illustrations but at the time and for the time the text was excellent. Britton went through the compiler-historians for his ecclesiastical history, he acquired a complete set of books on each cathedral, he had the indefatigable Brayley going through fabric records, he applied to local scholars and the cathedral authorities for information. Then all the material was arranged in systematic

form; each account began with the history, then came the construction and arrangement—the fabric—then the monuments, the lives of the bishops, and finally a bibliography. The form is substantially that of modern books. Britton had a tidy mind. The author himself accompanied two or three artists to the cathedral and there directed their labours for a month or so. The Le Keux brothers and other engravers then took over and after that the parts were issued.

Very properly, considering his provenance, the series began with Salisbury. Britton had hoped that Henry Hatcher (the ghost of the historian Coxe) would write the text but when he applied to him he learned that Hatcher had already undertaken to write the text for Dodsworth's projected book. Undeterred Britton went down to Salisbury with his chosen artist Frederick Nash. As soon as they got there Nash deserted to the other side. In spite of all this the first volume of the series was a great success and the work went steadily on. For some reason the success was not maintained and the series appears to have been quite unprofitable. This failure was all the stranger because the quality of the drawings improved as time went on, but whatever the cause Britton lost heart and the work was done very slowly. Each new volume had a preface full of the author's complaints. Here he was producing a work of national importance and what was he getting out of it? In fact he must have got quite a bit. He put up for sale a unique copy of the *Architectural Antiquities* with the original drawings and proofs of the plates for £500, and unique copies, with the drawings, of the Salisbury Cathedral and Norwich Cathedral volumes for 120 guineas and 100 guineas. They were bought by John Broadley, a Yorkshire

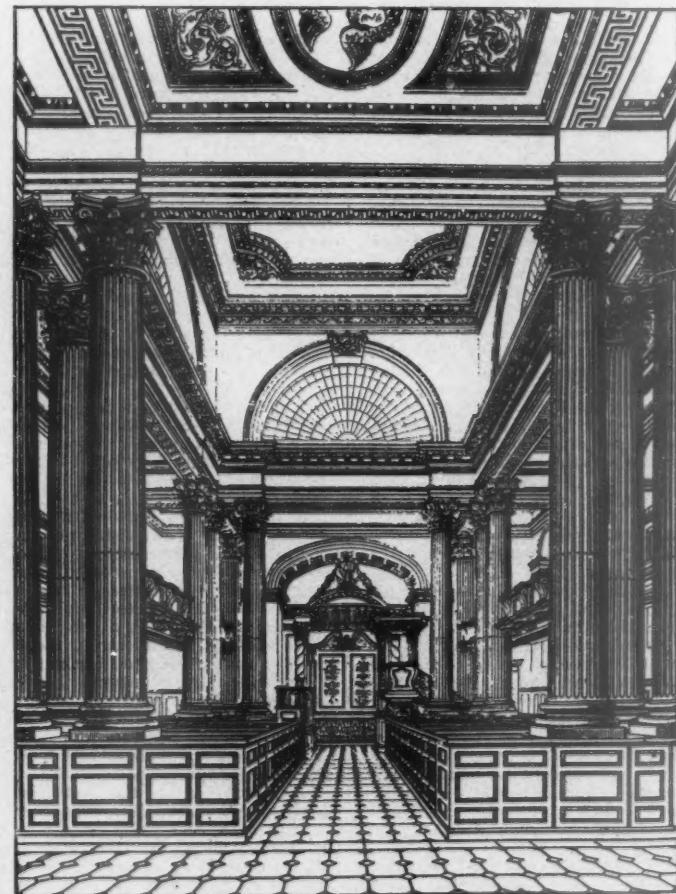
patron, as were all the later cathedral volumes. That must have been quite a handsome capital gain. The money was well earned for the public had been rewarded with dozens of splendid engravings by the Le Keux brothers. They had for the first time managed to suggest the space, the spaciousness, the height and the delicacy of a Gothic nave. The engravings are still splendid works of art and worth a few thousand photographs apiece.

With the cathedrals dragging their weary and unprofitable way Britton undertook fresh work. The grand subscription volume, *Graphical and Literary Illustrations of Fonthill Abbey*, which had Beckford's approval, was published in 1823. As soon as the first copies were distributed (806 of them) some of the plates were destroyed, an excellent expedient still in favour. The drawings were by the competent Cattermole, the engravings from less competent hands—though Le Keux contributed some characteristic work. The text was redeemed from being dull by the account of the visit of Nelson and Lady Hamilton to Fonthill in 1800. In the evening the party did scenic representations and Lady Hamilton displayed herself as Agripina, which has an irony all its own.

The next major work after the Fonthill volume was perhaps Britton's masterpiece. The *Illustrations of the Public Buildings of London* was published by Britton along with Taylor and Pugin. (According to Britton his fellow owners did him down.) Such is the reputation of this work that beyond saying that it is the finest thing of its kind, that the plates—elevations, plans, sections—were done with a marvellous simplicity and grace that has not been

equalled since and that as architectural book illustrations they are without any equal, one need not specify. Two points are, however, worth mention. The Le Keux engravings were not better than the others—Le Keux had not slipped, he had bitten the rest. The second point is that the text almost deserved the illustrations. The two volumes cost £3,360 to produce and were not a success on the market.

In 1827 Britton published *The Union of Architecture, Sculpture, and Painting; exemplified by a series of illustrations, with descriptive accounts of the house and galleries of John Soane*. He had known the great architect for thirty years, had been a buyer for him (one of his purchases was Hogarth's *Election*), and this was to be a tribute as well as a profitable venture. The text was by the journalist, W. H. Leeds, and very dull, the illustrations were competent and minutely accurate, and the whole thing a disastrous failure. Before the consequences of the failure had come home Britton had issued, with Pugin and the Le Keux brothers as fellow publishers, *Architectural Antiquities of Normandy*. The engravings only were sold and the text, a worthless one, was given to the subscribers in order to circumvent the eleven copies law. (Britton waged unceasing war on the receivers of the eleven copies, which cost him a fortune—he was all the more angry in the knowledge that some wily Celts sold all the free books they got. Britton wrote a bitter book for Longman's on the subject. He gave the British Museum a copy of the Normandy book—Sir Frederick Madden was a friend and helped him with information.) The interiors of the churches and cathe-

2. St. Mary Woolnoth, London, from *Public Buildings of London*, Vol. 1.



Abbey Aux Dames, Caen, from The Architectural Antiquities of Normandy.

ditals as drawn by Pugin and engraved by either Le Keux are quite the finest work of the kind ever done. They are accurate and beautiful and such things will never be made again.

The Soane book brought Britton down, so he let it be known. He wrote to Soane: 'Instead of publishing myself, I must write for the publishers at so much per sheet, and I have now two or three offers. I must still work hard to keep up my credit and pay my way.' Soane replied that Britton could forget his debts for the time being but not long afterwards was so infuriated by Britton's haggling over the price of the plates of the *Union* that he reminded him that £550, minus the cost of books bought on his behalf, was owing. The quarrel was patched up and in 1835 Soane very generously bought the plates for £680 10s., thus squaring accounts.

Naturally enough the hackwork he had to undertake late in life was far from the standard of his own publications. Nevertheless it was good enough and indeed he must, with this experience as writer, editor and organizer, have been a boon to any publisher. He wrote *Bath and Bristol* to illustrations by T. H. Shepherd, then, in 1830, *Memoirs of the Tower of London*, in collaboration with Brayley. In the same year came *Picturesque Antiquities of the English Cities*, a charming and valuable collection of W. H. Bartlett—Le Keux plates. In 1832 he produced *Descriptive Sketches of Tunbridge Wells and the Calverley Estate*, one of the most candid guide books ever written. So candid is it that one might suspect the author to be a hireling of Buxton or Bath. Readers were warned at great length of the dangers resulting from the steel in the water, especially the ladies, who could expect 'preternatural turgescence of the uterus,' which sounds pretty horrible. The steel in the water 'produces costiveness, congestion of the liver, and, ultimately, preter-

natural fulness in the brain, with its consequences.' However he dealt fairly and showed how the steel could be removed (a method all his own and guaranteed by Faraday) and stated the waters to be good for all diseases which had general or local debility for their basis (for example 'the dyspeptic state of the literary student, panting for fame and distinction in his secluded study'). Apart from the medical lore it was a useful compilation.

Slowly and very unwillingly Britton went down. The *Cathedral Antiquities* had to be given up. Britton made strenuous efforts to keep them going and finally wrote to the cathedral authorities asking for their support. He should have known better—most of them did not even bother to reply. So, in 1835, it was decided that Carlisle, Chester, Chichester, Durham, Ely, Lincoln, and Rochester would not take their place in one of the finest series of books ever published. (Happily R. W. Billings later made good two of the gaps.) Britton, his work done, put all the unsold copies, along with the plates, up for auction, added to them all the remaining copies of those works—London, *Architectural Antiquities*, and *Normandy* among them—which he had published. They were all bought by M. A. Nattali, who sold them off at between a half and a third of the original price. It must have been a considerable transaction. The *Cathedral Antiquities* alone had cost over £19,000 to produce. It is sad to record that the sale did not do Britton much good. He invested his money in a railway company and in five years had lost it nearly all.

After the grand sale work went steadily on. 1836 saw the publication of *A Dictionary of the Architecture and Archaeology of the Middle Ages* (another financial failure) and *The History of the Ancient Palace of the House of Parliament at Westminster*, which he wrote with Brayley. In 1839 he wrote the text for John C. Bourne's drawings of the building of the London and Birmingham Railway—a splendid volume of great historical value. In this year he also sold part of his library\* and it fetched £1,029 14s. In 1840 he published *Graphic Illustrations . . . of Toddington, Gloucestershire, the seat of Lord Sudeley*. Sudeley was an amateur architect designing in a Gothic of c. 1800 and he paid for the plates, which were pleasantly drawn and etched by R. Kitton.

The literary work continued but by now a new race of 'scientific' antiquaries had come into being and the sort of thing Britton could write would no longer do. The younger men, to their credit, got up a subscription and gave him a testimonial† (the list headed by Prince Albert) and a dinner at a favourite resort of his, the Castle Hotel, Richmond. In exchange Britton undertook to write and present to each

subscriber to the testimonial a copy of his *Autobiography*. (This rambling work only took his story a small way through his long life and was devoid of any literary merit.) At the time of the testimonial—1845—some figures were collected about Britton's works. As a publisher or part publisher (that is excluding the *Beauties* and much else) he had issued 66 volumes, of 17,122 pages, with 1,866 engravings and costing £50,328. The quality of the productions completes the story.

After that Britton lived in retirement. He satisfied a life-long ambition by writing a book to prove that the Junius Letters were by Colonel Barré, a theory not embraced by other literary historians. One of his last literary compositions was a tribute to E. W. Brayley, who died after sixty years of continuous literary work in 1855. Britton himself died on the first day of 1857.

John Britton was a special case. His mind was undistinguished, his character not particularly endearing. Yet without being very clever, or very learned, or very amiable, or very successful how well worth doing his life's work had been. The work itself fits into no obvious category. Britton was a popularizer, the most important of the Gothic Revival. An antiquary who knew him well wrote: 'He is something between a book-maker and a book-seller. He seems to have thought that there was a great virtue in Advertising. He told me he had spent £500 in advertising one of his works and 250 on another. His schemes in this way have been very successful.' His advertising propensities were equalled by his knack of getting scholars to do unpaid work for him by personal, and fulsome, appeals to their good nature. Of a 'popular' journalist an unpopular novelist wrote, 'his sincerity took the form of ringing doorbells and his definition of genius was the art of finding people at home.' Britton put his hand to many doorbells and found many useful people at home. But that is only part of him.

Having no great talent as an architectural writer still Britton knew

exactly the sort of books he wanted to bear his imprint. It is the Britton imprint not the Britton text that matters. The imprint implies Mackenzie, Pugin, Ansted, Blore, Kitton, Bartlett, Cattermole, the Le Keux brothers. It was Britton who gathered these artists, who supervised them, who published them. It was he who formed the projects which gave them the chance to display their splendid talents. It was he who brought architectural book illustration to its perfection. It was he who showed that beautiful books need not be mere monstrous folios for the rich collectors' libraries. Comparisons bring it all home. The next cathedral series after Britton's was the dumpy, workmanlike, railway station book-store guides of Murray's. They were textbooks for trippers, unlovely and efficient. The Bell series of the end of the century were, so far as the text went, the best of all—but the drawings and photographs! Apart from Gothic what book on the buildings of London published in the last hundred years can compare with Britton's? None.

The special talent of an impresario, of a popularizer responsible for a succession of such beautiful books cannot adequately be put into words; to feel it, to admire it, it is necessary to look at a Mackenzie-Le Keux plate of an English cathedral, a Pugin-Le Keux plate of a Normandy cathedral, a scene of an English cathedral town by Bartlett, an illustration of a London building of 1820. To look at them is to realize that Britton's work had been worth doing, to have looked at hundreds of them, to have had such pleasure, is to feel the greatest respect for their inspirer.

The apprentice authors of the ballad about the powder tax had had high literary ambitions. One lived to publish some of the finest of English books, the other to write the masterpiece of English topography. They surely had, not imagining the drudgery of it all, lived up to their hopes. We can hope, the drudgery behind them, that they knew at the end of their long literary lives that it had been worth the labour.

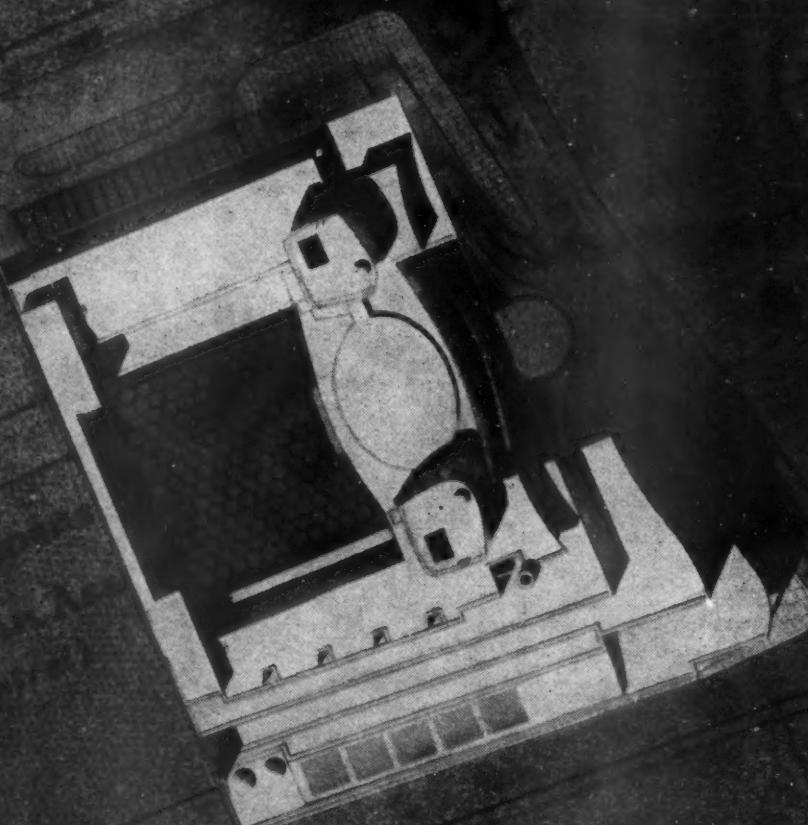


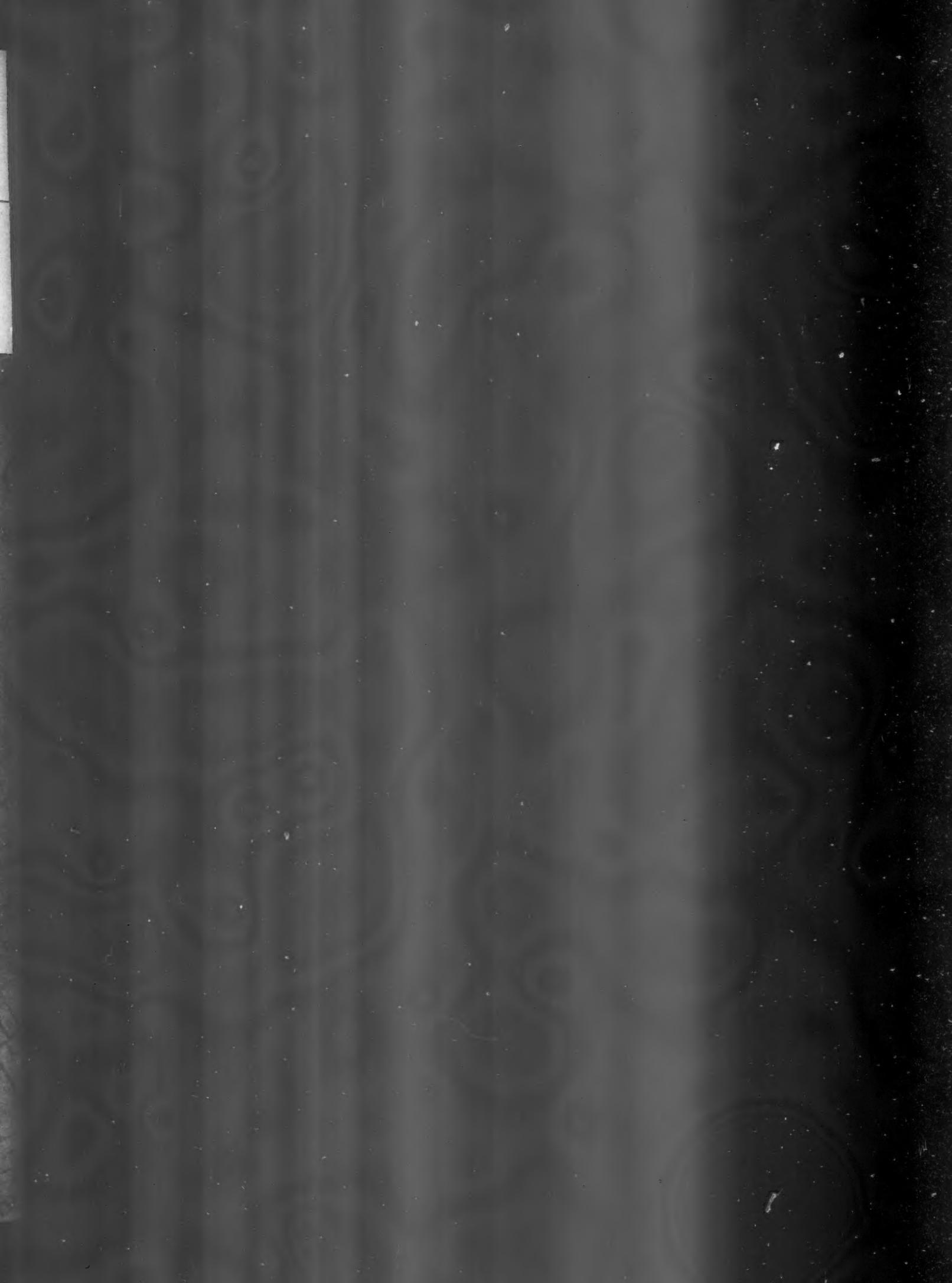
4. Friar Street, Worcester, from Picturesque Antiquities of English Cities.

## T. U. C. MEMORIAL BUILDING

Unlike the Festival Hall—the only comparable building erected in London since the War—this building has a restricted site in a congested area. The architect's response to this challenge, turning a relatively unemphatic façade to the street, right, and looping traffic under the block and out at its back, below, is only one of the remarkable features of this design, which is fully described and illustrated.

Site plan: one way working shown in Dyott Street as devised by architects but not yet in operation.







**ARCHITECT**

**DAVID DU R. ABERDEEN**

**partner-in-charge**

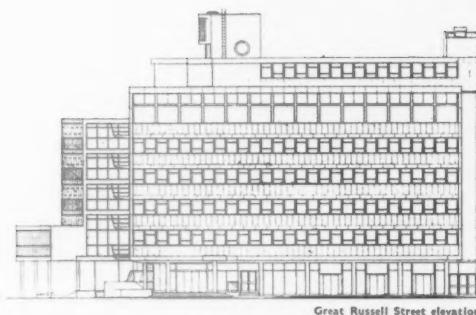
**Peter Hatton**

**associated partner**

**J. S. Heathcote**

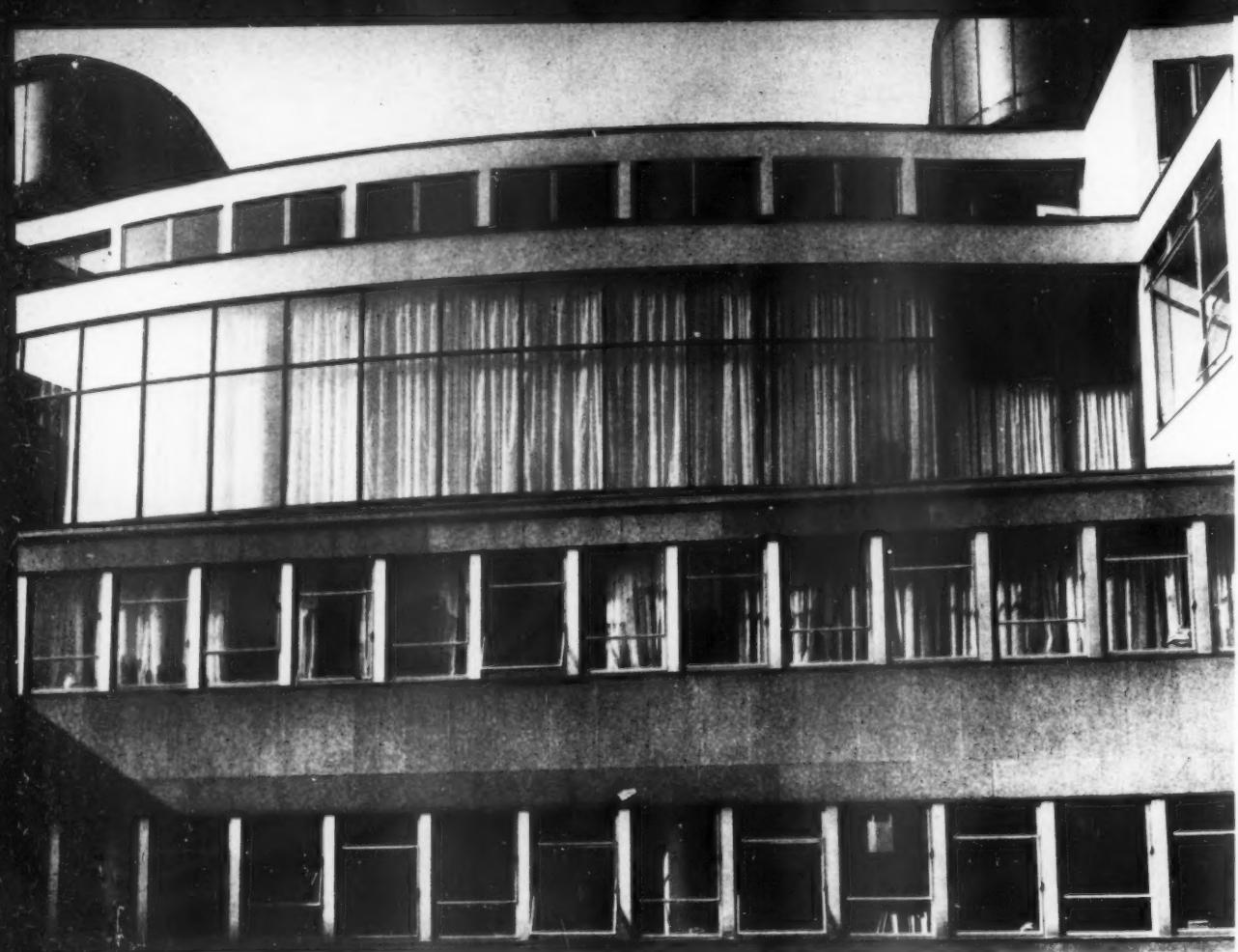
**assistant architect**

**J. M. McIntosh**



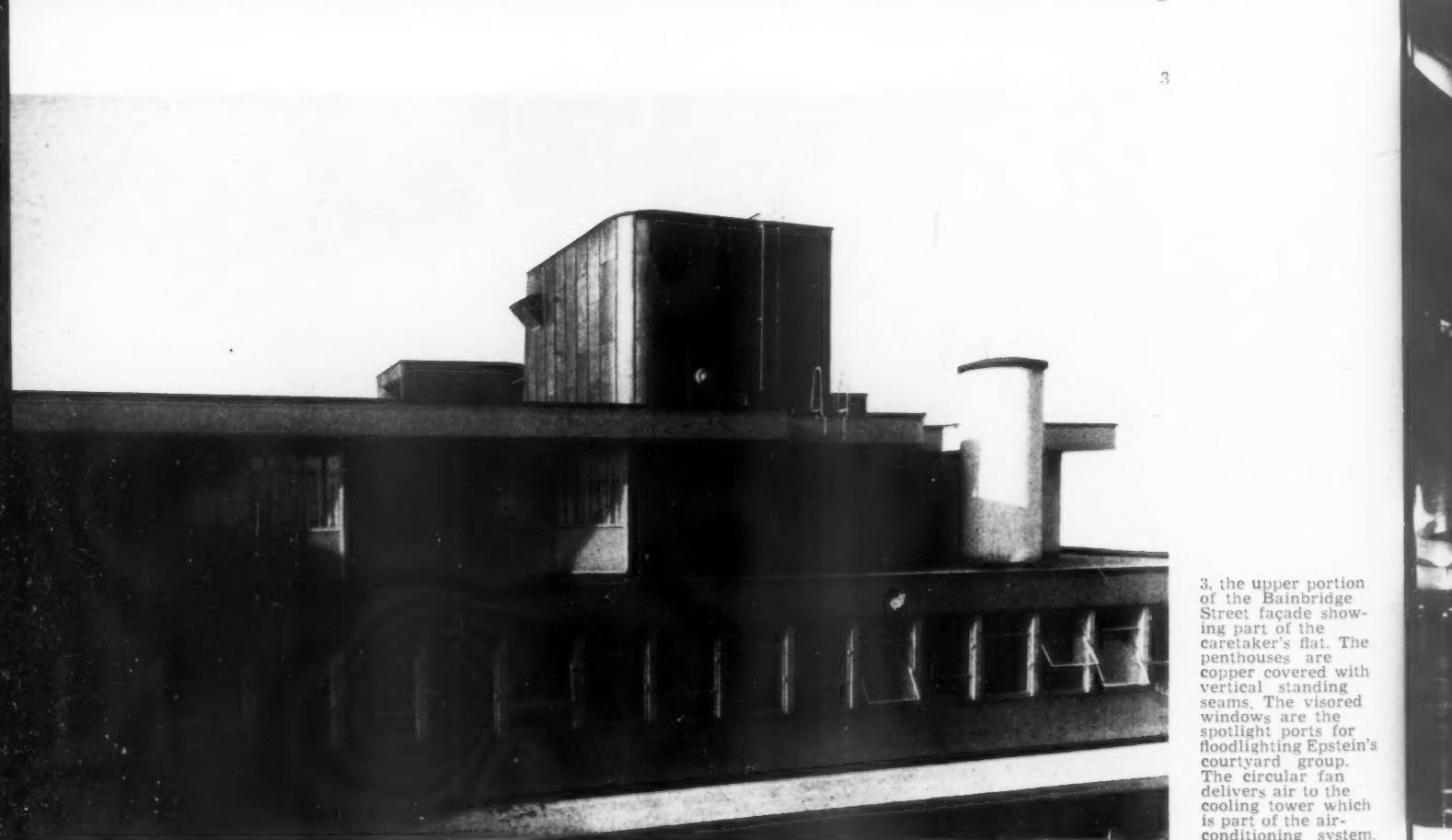
1. Great Russell Street elevation and return to Dyott Street. YWCA building at extreme right.





2. detail of upper portion of Dyott Street façade. The first set-back is the council chamber, the second, at sixth floor, is the original boardroom (now general office area). The council chamber mullions are non-structural being of Burma teak with a metal core. The windows are fixed double-glazed. The sixth floor mullions are structural members supporting the roof. The set-backs result from stipulated LCC building angles from back of pavement opposite the building.

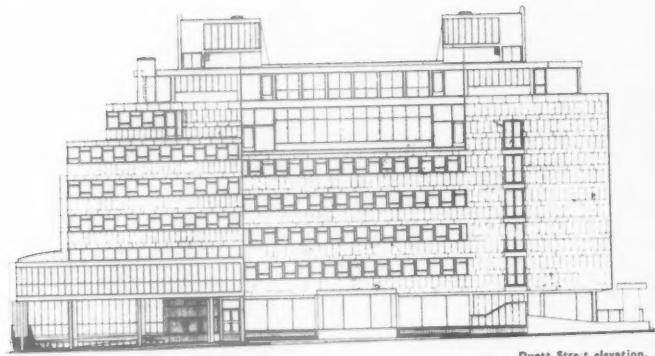
2



3. the upper portion of the Bainbridge Street façade showing part of the caretaker's flat. The penthouses are copper covered with vertical standing seams. The visored windows are the spotlight ports for floodlighting Epstein's courtyard group. The circular fan delivers air to the cooling tower which is part of the air-conditioning system.

3

**T.U.C. MEMORIAL BUILDING**



Dyott Street elevation.

4 and 5, night and day views of the Dyott Street front. The cladding is generally 2in. Cornish granite, windows are painted galvanised steel, mullion fascias, cill's and head drips are aluminium. The two penthouses, one just visible in 5, have vertical patent glazing on this side, with the lift machinery behind.



4



5

### T.U.C. MEMORIAL BUILDING

6, night entrance to the training college on the Bainbridge Street side. The open portico is surmounted by the college offices. Cladding to the columns and elevated pavement edge is vitreous mosaic; to the first floor above, frost-proof tiles.

7, view along Bainbridge Street from the east, evening sun falling on the building from the west. In the background, Lutyen's YWCA. The elevated pavement, over the car park rampway, gives access to the ground floor tenant's entrance. The whole of the first floor comprises the training college accommodation. The blank wall is to the lecture theatre.

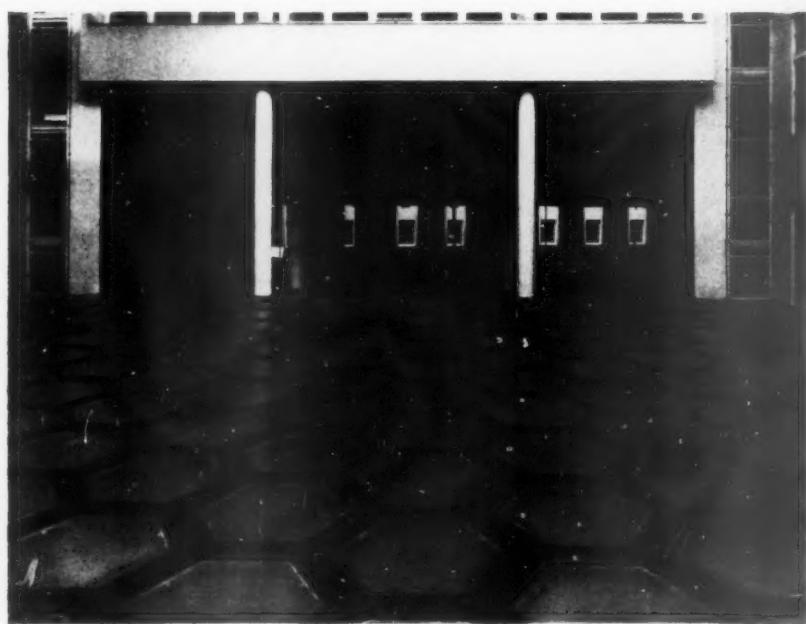
8, view of the Great Russell Street foyer serving the conference hall. The staircase leading to the hall passes under the main entrance portico. Glazed screens and doors are plate glass and armour plate glass respectively, in bronze frames.

9, view across the conference hall roof, forming the floor of the courtyard, taken from the base of the sculpture group at the foot of the memorial wall. Lead lined drainage channels form the network between the triple glazed hexagonal units which are mounted in the roof coffers.



8

On the facing page, 10, night view of the main entrance lift hall from the Dyott Street side. In the foreground is the suspended hood (lead covered timber) over the car park/ portico staircase.  
11, night view of the conference hall roof seen from the memorial hall viewing balcony.



9



**T.U.C. MEMORIAL BUILDING**



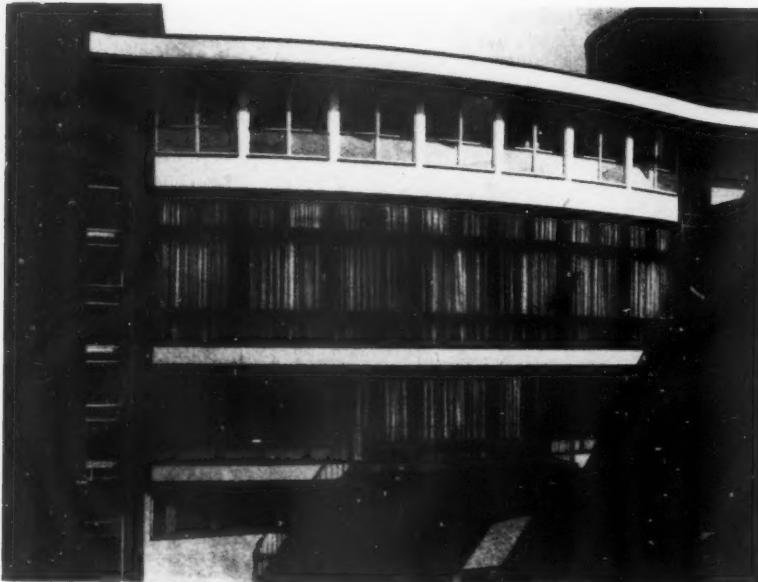
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12, the memorial wall of the courtyard from the ground floor, looking through the screen of rods to the twin light wells of Lutyens' YWCA building. The sculpture on the pedestal is by Epstein but will not be unveiled until 1958 and hence has had to be masked.

13, upper part of the centre block to the courtyard, looking on to the memorial wall. Below the top floor (original boardroom, now general office area) is the Council chamber and the lowest bow with its balcony is the general secretary's suite.

14, courtyard detail. The memorial wall faced with Genoa green marble is flanked by Pyrex glass rods set in non-ferrous metal frames. The marble to the wall has a slate capping surround. The head beam houses a monorail from which a cradle can be hung and travelled anywhere over the wall for hand cleaning and maintenance. The staircases each side of the wall have fully glazed landings overlooking the sculpture group.

13



14







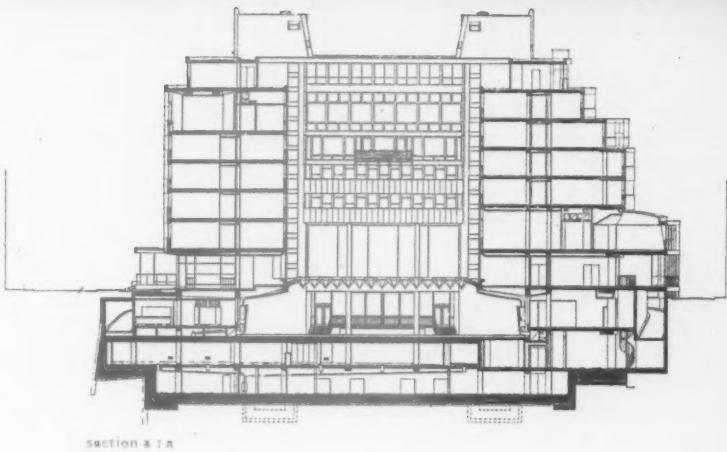
The design of this building was the subject of an open architectural competition won by the architect in 1948. Detailed development of the scheme was started immediately after the competition award although it was not until early 1953 that a building licence was granted. The building has been occupied in stages, beginning in September, 1956, and all the accommodation above ground floor has been in use since March, 1957. The whole job was virtually completed in June of this year.

There were exceptional problems in creating a memorial and headquarters building providing all the necessary accommodation on a site which was cramped—a rectangle about 180 ft. by 130 ft.—and surrounded by narrow streets on three sides and by Lutyens' YWCA building on the fourth. Two of the side streets, Dyott Street on the east and Bainbridge Street on the south, with carriageways only 12 ft. and 15 ft. wide respectively, carry negligible traffic. The third, Great Russell Street on the north, upon which the main frontage is arranged, is moderately busy. A scheme of one-way working for the surrounding streets was devised at the competition stage and is still subject to consideration when the building is fully functioning with its conference hall in use.

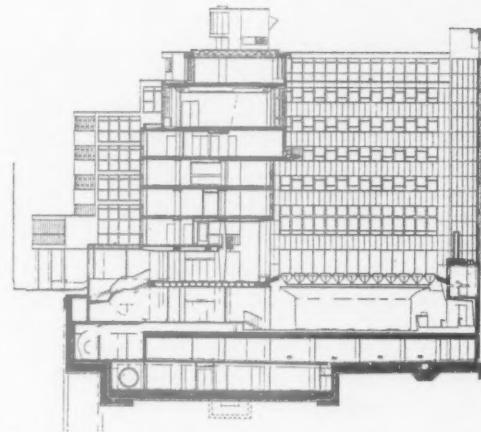
Great restrictions were imposed in the matter of building angles (51 deg. from the back of the pavement on the opposite side of the surrounding streets with the same angle applying to all internal light-wells: this latter being subsequently reduced to 45 deg. from cill level of the lowest windows in the courtyard) and a height limitation for the building of 80 ft. These site restrictions, coupled with the great amount of accommodation made up of components of radically different usage (administration offices, secretariat, council suite, training college, conference centre, libraries, dining hall, etc.), precluded any solution on the lines of a single lofty slab with the special units suitably disposed at its foot or cast off as wings from the main block.

The plan forms three sides of a large central courtyard with the building roughly following the street alignments. The fourth side of the courtyard is closed by the YWCA, 'E' shaped on plan, with the middle stem of the 'E'—flanked by mean and narrow light-wells—coming axially on the courtyard. The party wall of the YWCA is used as the support for the memorial wall which fills this side of the courtyard entirely. The building is virtually organized about the wall and the axis which its scale and symmetry create. Everywhere within the courtyard the wall and the sculpture group at its foot are either seen or sensed. The wall itself, of deep Genoa green marble, is designed as a 'back-cloth' for the sculpture which Epstein has carved on site out of a ten-ton block of light Roman Stone.

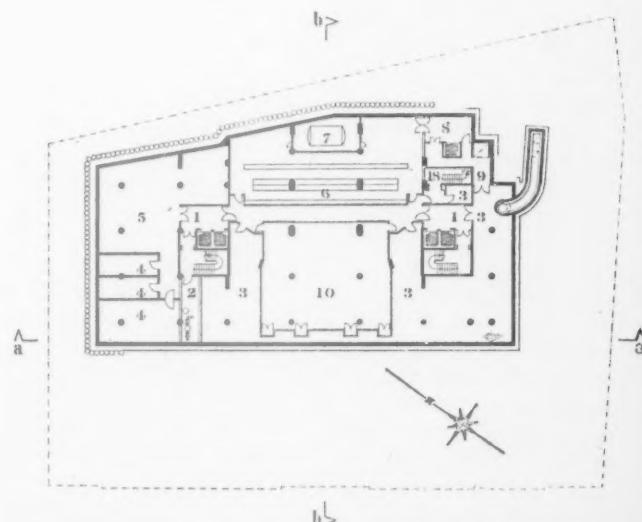
From the ground floor memorial hall facing the wall across the courtyard, the eye may travel to the full height of the wall, the sides of which are canted (14½ deg.) in order to prepare the eye for its halt. At the flanks of the wall and across the top, lightly curtaining the YWCA wells, a complete screen of Pyrex glass rods permits diffused light from the wells to enter the courtyard and silhouette the wall turning the drab utilitarianism of the wells to æsthetic advantage. From the west, the sun strikes powerfully through the glass rods, making them scintillate brilliantly while the marble wall becomes sombre. In fact, the light and shade, the effect of reflection and diffusion, is constantly changing within the courtyard with every variation in the sky and the position of the sun. At the very top of the wall (85 ft. 7 in.



section a : a



section b : b



lower sub-basement

key.

1, lift hall. 2, ejector plant. 3, store. 4, strong room. 5, future strong rooms. 6, stationery store. 7, chilled water tank. 8, goods lift half. 9, lift motors. 10, recreation room. 18, service staircase.

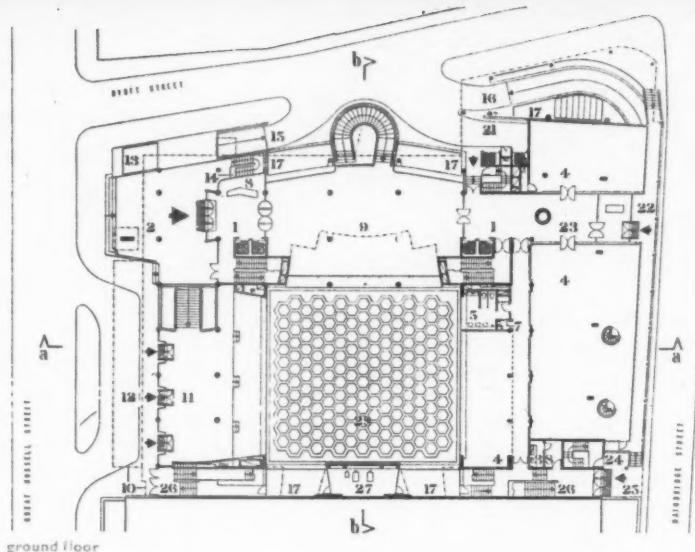
above ground floor), and with a clear span from side to side of 54 ft., a massive head beam is swung across the courtyard. This arrests the eye and induces it to explore the wall downwards to return again to the focal sculpture group. The head beam houses a cleaning sparge pipe from which the whole wall and surrounding glass rods can be gently sprayed, and a monorail by means of which a bosun's chair can be travelled anywhere over the wall for cleaning, inspection and maintenance. The monorail passes through hatches at the ends into housings from which the chair or cradle can be launched.

From the memorial hall and the general secretary's private balcony at fourth floor the wall can be taken in as a whole, while from the four general office staircases at the corners of the courtyard an infinite variety of changing viewpoints are obtainable from the completely glazed landings all the way up the building. The views of the wall from other rooms overlooking the courtyard (unless one approaches close to the windows) are truncated slices of marble flanked by glass rod wedges, designed to be effective compositions in their own right. At ground-floor level, from the street, the view of the wall is not seen above the plinth level to the sculpture base due to the cut-off by the first-floor ceiling soffit.

Generally, the building about the courtyard is seven storeys high with set-backs on the street sides and at sixth-floor level only on the north and south courtyard sides, introduced to fall within the building angle requirements. By not bringing the building up to the building lines it has been so disposed to enable the set-backs to be integrated sympathetically without the feeling of disruption which conspicuous terraced set-backs would have created along the street frontages.

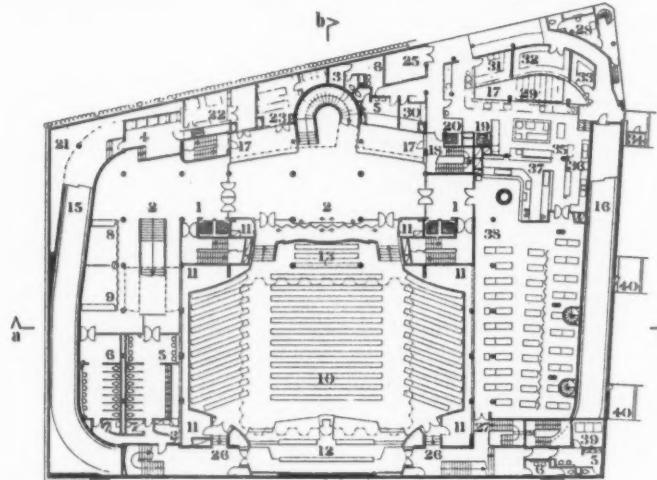
The main entrance is under an open portico on the Great Russell Street side, the rest of this frontage being given up to the conference hall public foyer with its separate vehicular draw-in beneath a long marquise which gives continuity to the portico. The main entrance links to the memorial hall, occupying the full width of the courtyard, and this in turn connects with the tenants' entrance on Bainbridge Street. Lift batteries are arranged at the TUC and tenants' entrances with general staircases incorporated behind the shafts. Spatially and visually the circulation area of entrances and halls extends from Great Russell Street to Bainbridge Street—some 180 ft. A bronze sculpture group by Bernard Meadows (now being cast and to be erected early in 1958) is to mark the Great Russell Street entrance.

The side of the courtyard facing the wall houses the major special units of accommodation: memorial hall at ground-floor level rising through two storeys with an internal viewing balcony introduced at first-floor level with commanding views on to the courtyard and the sculpture group; reference library on the third floor, centralized for use by all departments; secretariat on the fourth floor, the general secretary's room having a balcony poised over the courtyard, and council chamber on the fifth floor. The sixth floor was to have been a boardroom but this has been abandoned and the area is now a general office space. The north and south wings of the building, along Great Russell Street and Bainbridge Street respectively, accommodate general office areas and departmental suites. In the Great Russell Street wing, four storeys of offices (first-fourth floors, inclusive) are surmounted on the fifth floor by the committee suite which runs the whole length of the building. Four committee rooms are planned en suite and can be thrown together to form one room 110 ft. long. The



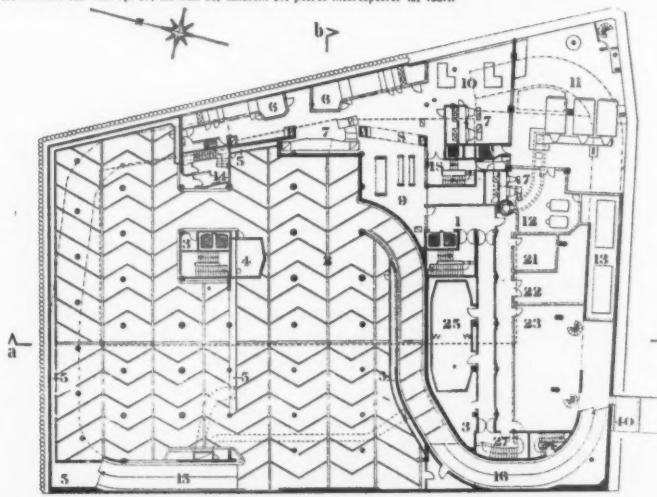
ground floor

key.  
1. lift hall. 2. entrance portico. 3. store. 4. general office areas. 5. male lavatory. 6. female lavatory. 7. cleaner. 8. enquiries. 9. memorial hall. 10. outline of building over. 11. street foyer. 12. car draw-in. 13. plant box and ramp hood. 14. portico to car park staircase. 15. car exit ramp. 16. car entrance ramp. 17. area. 21. loading dock. 22. high-level pavement. 23. tenant's entrance. 24. car park fire-fighting staircase. 25. night entrance. 26. emergency exit. 27. projection room. 28. glazed roof of conference hall.



basement

key.  
1. lift hall. 2. conference hall foyer. 3. store. 4. telephones. 5. male lavatory. 6. female lavatory. 7. cleaner. 8. male cloaks. 9. female cloaks. 10. conference hall (seats reversible). 11. duct space, etc. 12. dais. 13. collapsible cinema screen. 15. car exit ramp. 16. car entrance ramp. 17. area. 18. service staircase. 19. garbage hoist. 20. goods lift. 21. switch room. 22. transformer chamber. 23. battery room. 25. telephone intake and apparatus. 26. emergency exit. 27. conference hall retiring rooms staircase. 28. engineers' lavatory. 29. heating chamber roof-light. 30. check office. 31. vegetable store. 32. dry goods. 33. larder. 34. cold store. 35. kitchen. 36. wash-up. 37. service. 38. canteen. 39. petrol interceptors. 40. vault.



sub-basement

key.  
1. lift hall. 2. car park. 3. store. 4. attendants' room. 5. car park extract duct. 6. air-conditioning plant. 7. ventilation plant. 8. air intake over. 9. evaporator and condensers. 10. compressors. 11. heating chamber. 12. calorifiers. 13. oil tanks. 14. car park to portico staircase. 15. car exit ramp. 16. car entrance ramp. 18. service staircase. 21. engineer's office. 22. engineers' workshop. 23. tenant's storage. 24. car park fire-fighting staircase. 25. conference hall retiring rooms. 27. retiring rooms staircase. 40. vault.

10 20 30 40 50 scale of feet

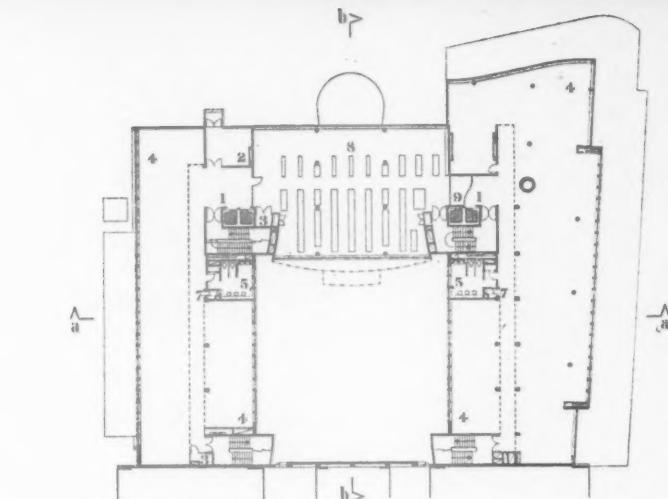
committee rooms are part of the council suite and the rest of the floor is given up to members' rooms, lavatories, chairman, etc. The council suite rises through  $1\frac{1}{2}$  floors, with a 15-ft. height.

In the Bainbridge Street wing, the whole of the office accommodation is let to one tenant (second-fifth floors, inclusive) with an independent entrance from the street. The sixth floor is occupied by the caretaker's flat, the saw-toothed arrangement of window walls giving the rooms a panoramic view of St. Paul's in the distance to the south-east. The first floor of the wing is devoted to the training college—an entirely self-contained unit for handling short courses of 50-70 students. The college is approached from the main entrance across the viewing balcony or by separate entry on the Bainbridge Street side at the YWCA end. It includes a lecture room to seat 70, with terraced seating; five seminars, each seating 12-15, and capable of being thrown together by means of folding screens; and a large library/reading room.

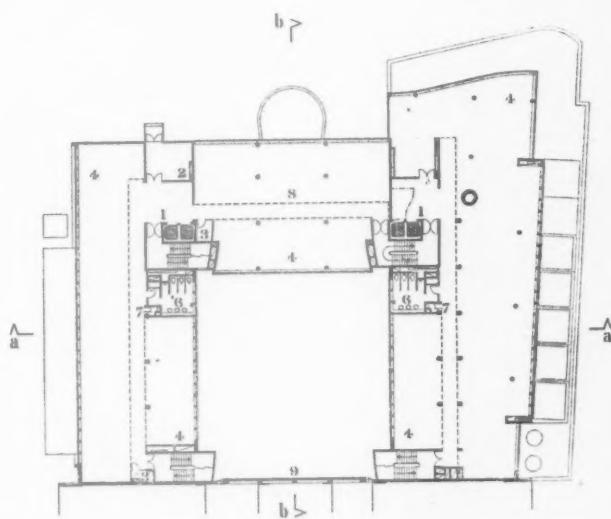
The conference hall, at basement level, is approached from the street foyer by a broad, straight staircase in an open well passing under the main entrance portico. The staircase links with a lower foyer repeating the memorial hall form above. This lower foyer can be fully opened up to the conference hall by sliding fully glazed screens. The hall is seated beneath the courtyard floor and extends under the north and south side wings of the building, having a clear width of 95 ft. The memorial hall and lower foyer are connected by a fully-glazed horseshoe staircase on the memorial wall axis of the building. The conference hall, its foyers, circulation, cloaks, etc., are planned to function as an entirely self-contained unit so that it may be let to outside bodies without the user entering the TUC's private portion of the building above. The hall is fully licensed by the LCC. The roof of the conference hall is glazed over-all with hexagonal coffers forming an integral part of the completely exposed welded structural steel space frame. The daylight factory in the hall is as high as anywhere else in the building under natural lighting conditions. Each of the 172 coffers has its own lighting point and the artificial light seen from above through the triple glazed roof units gives the courtyard floor a soft luminosity—a pavement of hexagonal flags. At night the light illuminates the courtyard to the full height of the building with an even diffusion of light.

The rest of the basement, apart from the conference hall and its ancillary accommodation, is occupied by a dining hall, seating 250, with kitchen, etc., equipped to cook for banquets up to 700. The kitchen is designed for use in conjunction with the hall, if desired, when it is let for functions. Beneath the conference hall, at sub-basement level, is a car park for fifty cars approached by ramps from Dyott Street. The ceiling of the car park (floor to the conference hall) is a 24 in. thick reinforced concrete civil defence slab requested by the Ministry of Works. At this level also is housed the main ventilation plant room and heating chamber with engineer's stores, workshops, etc. A lower sub-basement accommodates strong rooms, general storage and cleaning staff rooms.

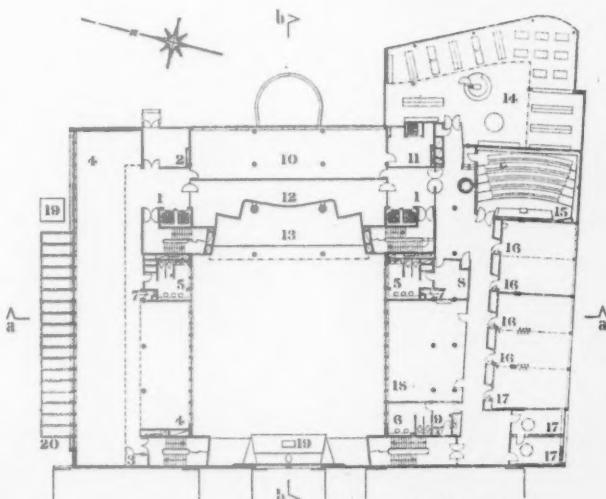
The structure is a monolithic r.c. frame with r.c. floors and roofs and hollow pot infilling in the superstructure generally. Beams are for the most part concealed in the slab thickness to give flat ceiling soffits—particularly in the general office areas—for flexibility and ease of subdivision with the standardized demountable partitioning employed. Low-pressure hot-water radiant heating panels are incorporated in the ceiling soffits or in suspended



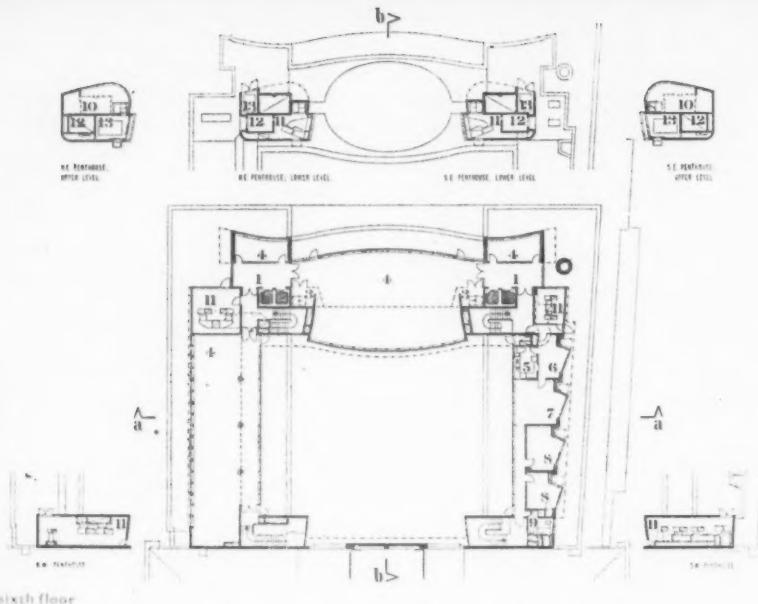
third floor  
key.  
1, lift hall. 2, waiting. 3, store. 4, general office area. 5, male lavatory. 7, cleaner. 8, library. 9, void.



second floor  
key.  
1, lift hall. 2, waiting. 3, store. 4, general office area. 6, female lavatory. 7, cleaner. 8, TUC filing. 9, memorial wall.

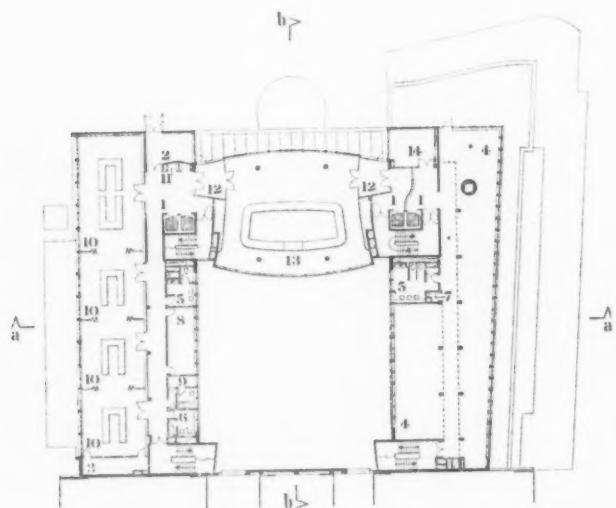


first floor  
key.  
1, lift hall. 2, waiting. 3, store. 4, general office area. 5, male lavatory. 6, female lavatory. 7, cleaner. 8, male cloakroom. 9, female cloakroom. 10, despatch department. 11, goods lift hall. 12, viewing balcony. 13, memorial hall; upper part. 14, library. 15, lecture theatre. 16, seminar. 17, study. 18, common room. 19, sculpture base. 20, glazed marquee.



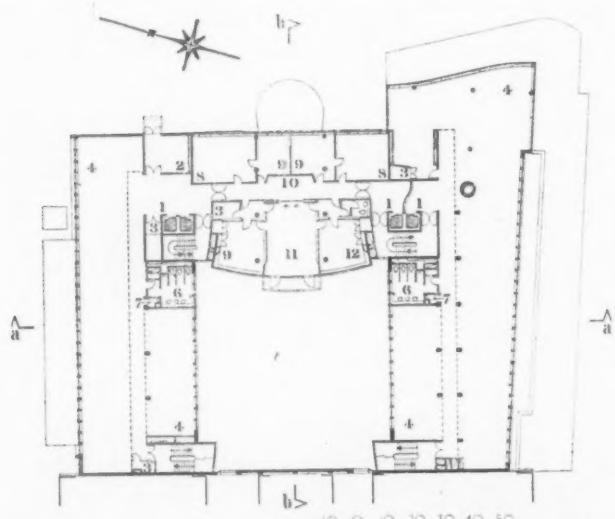
sixth floor  
key.

1, lift hall. 3, store. 4, general office area. 5, kitchen. 6, dining. 7, living. 8, bedroom. 9, bathroom. 10, lift motors. 11, ventilation plant. 12, cooling tower. 13, tanks.



fifth floor  
key.

1, lift hall. 2, chairman. 3, store. 4, general office area. 5, male lavatory. 6, female lavatory. 7, cleaner. 8, members' room. 9, bathroom. 10, committee room. 11, telephones. 12, ante-room. 13, council chamber. 14, spare office.



fourth floor  
key.

1, lift hall. 2, waiting. 3, store. 4, general office area. 6, female lavatory. 7, cleaner. 8, assistant secretary. 9, private secretary and typist. 10, ante-room. 11, general secretary. 12, committee room.

plaster ceilings. In the office areas, continuous radiant heating panels are provided beneath window cills (completely flush with the wall face) to augment the ceiling heating. Where it has been desired to keep the heating panels out of ceilings altogether they have been arranged beneath the floor finishes of hardwood block or marble. The structural members in the external walls are r.c. mullion ribs between windows taking the place, in general, of main stanchions in the outside walls. In the undulating walls, floors are carried from stanchions set back within the building.

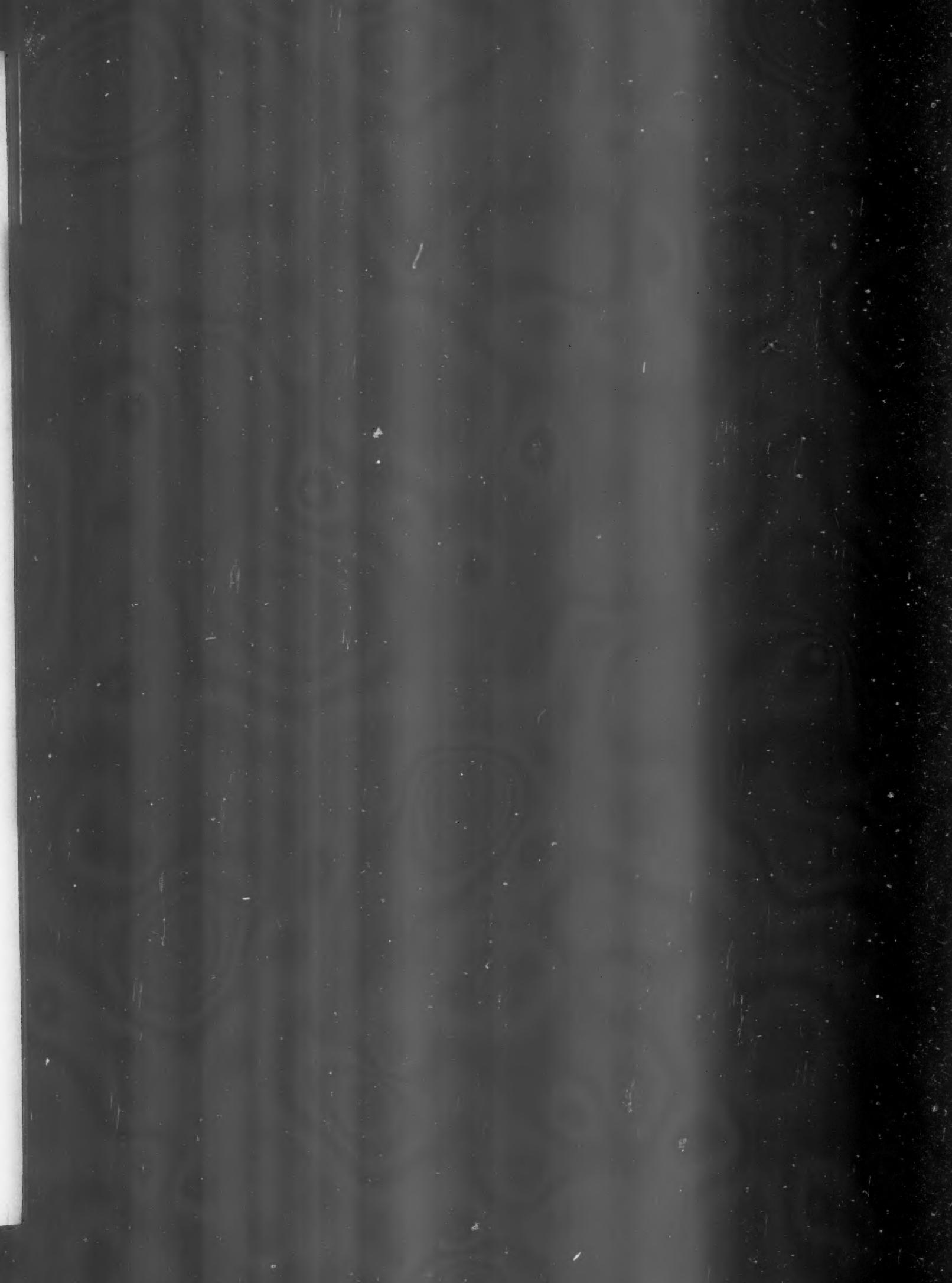
The street facings are 2-in. Cornish granite slabs polished to a 'wet sheen'. The slabs are supported on cramps and non-ferrous metal corbels, built into pre-formed pockets in the structure; r.c. aprons form the infilling beneath cills between the slender mullion ribs (5 in. wide by 10 in. deep) and provide essential stiffening to the ribs and structural backing for the facings. A 1-in. cavity is left between the granite and the structure.

In the courtyard the facings are 1½-in. precast vitreous mosaic-faced panels with haunches on the back which seat into preformed pockets in the structure. The panels are solid-bedded. The wall beams in the north and south courtyard walls are 5 ft. deep and span 54 ft. The mullion ribs were formed after the beams and provide vertical stabilizing tie members between the top of the beam (at cill level) and the floor slab at ceiling level (soffit of the beam above). In situ vitreous mosaic is used to columns and other limited faces on the street sides together with a certain amount of frostproof tiling, generally forming panels.

All staircases are of r.c. monolithic with the structural carcase but shuttered up and formed subsequently. General office staircases are finished with precast terrazzo tread and riser units cast in one piece. Main staircases are finished with 2-in. Burma teak.

In the office areas floors are of compressed cork tiles laid over 2½-in. screeds in which a complete under-floor fibre duct system is arranged for the running of all electrical and telephone services. Corridor ceilings are finished with acoustic sound-absorbing tiles. All partitions in the office areas have been designed to standardised details and modules to permit flexibility in arrangement. They are completely demountable, lightweight, and have numerous wiring chases housed in them for use with the flexible lighting and switching system perfected for the office floors.

In all the special areas and lift halls, floors are either hardwood strip or block, except for the main entrance hall, which is Sicilian Pearl marble. All the major units of accommodation are lined with hardwoods and veneers and, in general, have suspended plaster ceilings. The considerable amount of trunking associated with the mechanical ventilation services is arranged behind the linings, since these areas are fully air-conditioned: refrigeration plant is linked to the system—in the conference hall, council suite and general secretary's suite. The dining hall, kitchen and all below-ground accommodation have full plenum mechanical ventilation, while the car park, corridors and lavatories throughout the building have mechanical extraction. The consulting engineers were Ove Arup & Partners (structural); J. Roger Preston & Partners (heating and ventilating) and G. H. Buckle & Partners (electrical). The quantity surveyors were D. R. Nolans & Co., the clerk of works was Mr. W. H. Roberts, and the general foreman for Sir Robert McAlpine & Sons was Mr. A. Farndan.





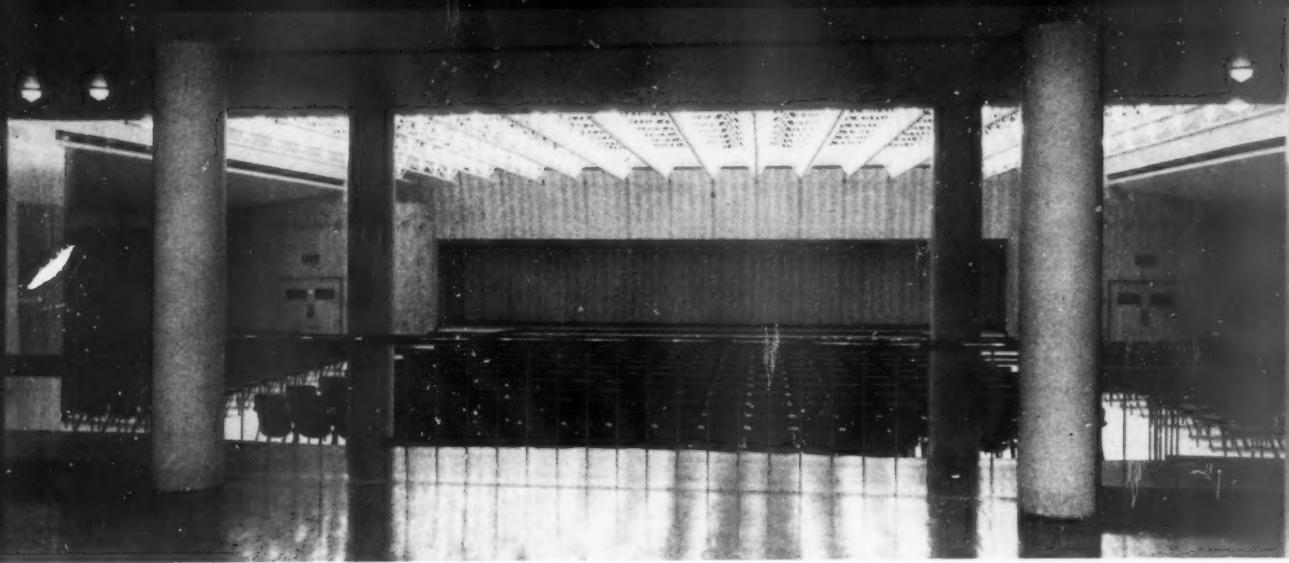
## *assembly hall*



15

### **T.U.G. MEMORIAL BUILDING**

15. the conference hall from the dais end. The horseshoe staircase from the memorial hall to the basement foyer can be seen in the background. Foyer and hall can be thrown together by the sliding away of fully glazed screens. The exposed structural space frame is surrounded by reinforced concrete perimeter edge beams with a fairface, white painted, finish.



16

16. view of the conference hall from the basement foyer with the dividing screens folded away to stores at the sides. Veneered linings to the hall are Lebanon cedar and Yugoslav beech. The floor to the hall is fully sprung maple strip ; to the foyer, Rhodesian teak block. The foyer ceiling is dead flat, painted white.

#### T.U.G. MEMORIAL BUILDING

17

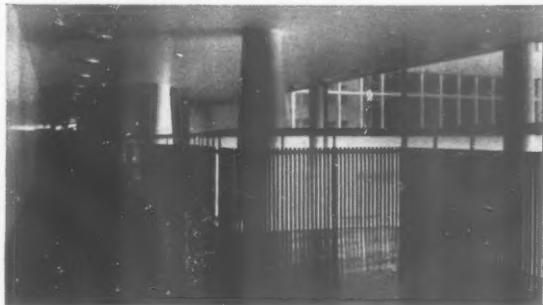


17. detail of the conference hall roof. Each coffer has its own lighting point for evenness of lighting within and similarly for leakage of light through the roof to the courtyard above ; see 10. The timber apron is a temporary provision concealing the winding gear for the blackout curtain, to be installed later, and designed to cover the underside of the whole roof when cinema projection is in use. The 172 lights are dimmer controlled and can be brought on from nothing to full in a sequence of four groups, each group forming a symmetrical pattern over the hall. The four groups can be used in any combination giving 24 different arrangements (and choice of light intensities) to suit the great variety of uses to which the hall will be put.

18. the viewing balcony forming the upper part of the main entrance memorial hall. The balustrade consists of a continuous run of 1 in. diameter polished British Columbian pine rods supported off bronze standards; the handrail is teak.

19. the main entrance memorial hall showing the viewing balcony. Ceilings are dead flat, painted white. The floor is Sicilian Pearl marble with a fine hexagonal pattern picking up that of the conference hall roof.

20. the main entrance memorial hall under the viewing balcony. The courtyard is to the right and the horseshoe staircase leading to the basement foyer is to the left. The tenant's entrance from Bainbridge Street is on the axis of the doors in the background.



18



19

20



## *council chamber*

21



### **T.U.C. MEMORIAL BUILDING**

21. peep vision window in the council chamber doors.

22. detail of the council chamber. The side walls are of British Columbian pine slats designed on the Copenhagen principle for sound absorption and diffusion. The ceiling is of British Columbian pine, slotted for acoustic purposes—resonance and absorption. The floor to the chamber is of Rhodesian teak strip.

23. hide-covered doors to the council chamber from one of the anterooms.



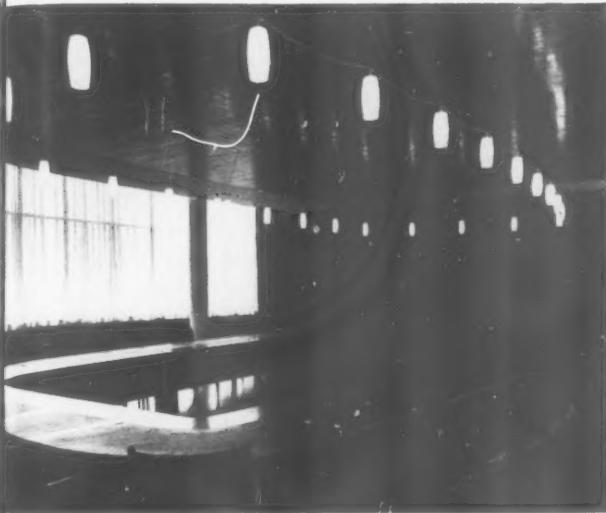
22



23

## committee & teaching rooms

24. general view of the council chamber. The light fittings are suspended by piano wire from the timber ceiling. The line of lights follows the council table under 25 and 26. details of the council chamber furniture. Aprons, table top insets and chairs are covered with holly green hide. The chair frames are of Honduras mahogany.



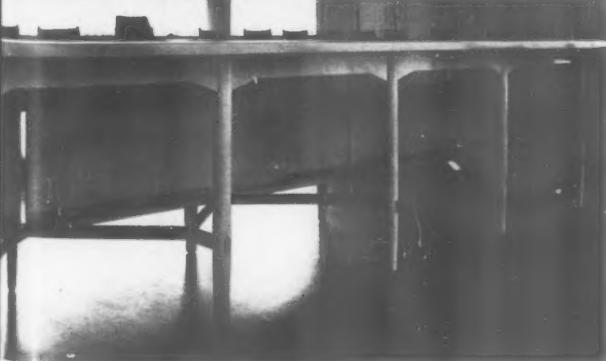
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25



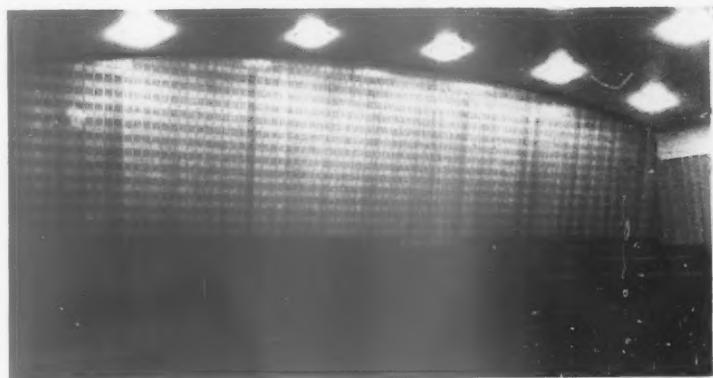
26



27



27



28



29



30

27. training-college seminar rooms.  
28. training-college lecture theatre, seating 70 in five terraced rows of seats.

29. general view of one of the four committee rooms forming the suite at fifth floor level which runs the whole length of the Great Russell Street frontage. The furniture is temporary.  
30. detail view of the sliding/folding doors between two of the committee rooms.

## staircases

cast lead fascia  
shown in position  
horseshoe staircase  
roof and first floor  
structure not shown

fairface rc. drum  
painted internally  
NOTE - staircase  
balustrades not shown

vit. mosaic facing  
to outside of drum

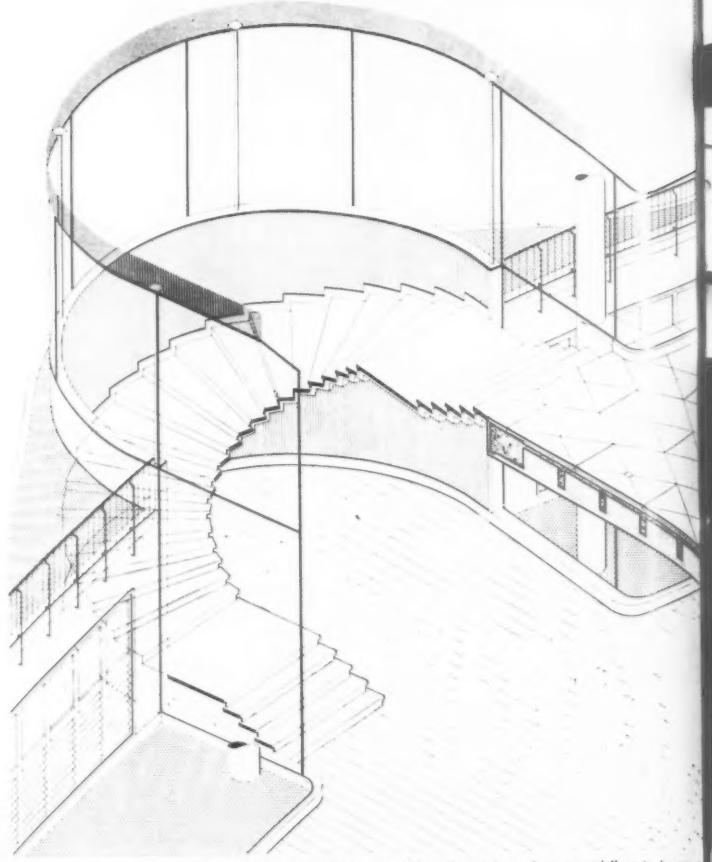
asphalt paving  
and granite kerb

painted ms. balustrade  
to area, with bronze  
handrail and standards

York stone coping  
to area

bronze-framed glazed  
screen to area  
mutation shown at  
intersection with  
ground floor slab  
remainder of  
screen not shown

CUT-AWAY ISOMETRIC  
SKETCH SHOWING  
GENERAL ARRANGEMENT



Cut-away isometric drawing of horseshoe staircase from ground floor to basement.

31. the glazed drum of  
the horseshoe staircase  
connecting the memorial  
hall to the conference  
hall basement foyer.  
The glazing is in  
bronze frames with  
mahogany cover fillets  
internally.

32. internal view of the  
horseshoe staircase.  
The reinforced concrete  
structural carriage and  
enclosing wall are  
fairface finish, painted  
white. The treads, land-  
ings and risers are  
'carpeted' with Burma  
teak. The handrail  
threads are bronze,  
supported on the well  
side off painted mild  
steel balusters bolted  
through the 2in. thick  
timber treads.

31



32





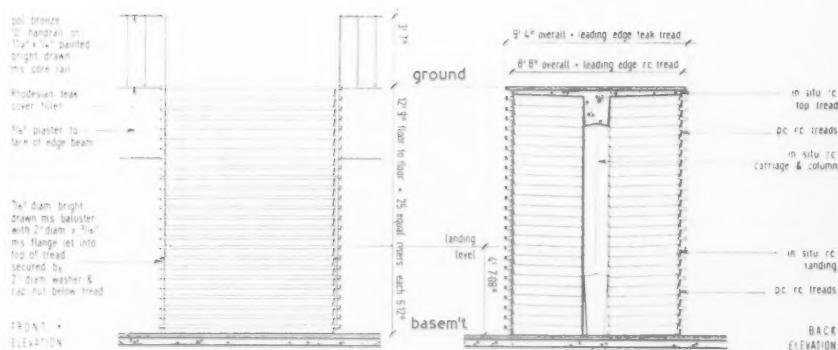
33



34

### T.U.C. MEMORIAL BUILDING

33 and 34, the staircase joining the street entrance foyer to the conference hall in the basement. The carriage is painted fairface r.c. carrying 2in. polished Burma teak treads and 1in. polished Burma teak risers; the handrail is polished bronze carried by mild steel balusters. The floor at basement level is polished Rhodesian teak.



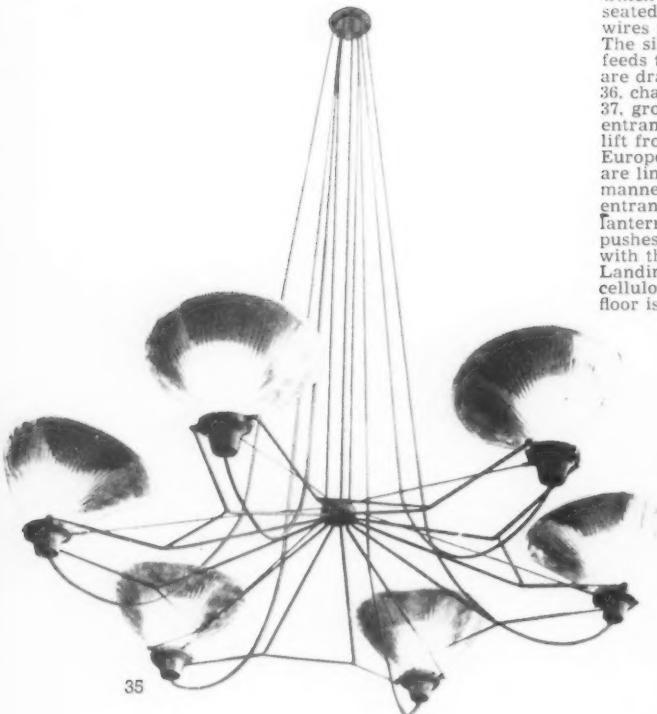
Elevations of staircase from entrance foyer to basement.

## furniture & fittings

35. committee suite light fittings. Standard prismatic glass reflectors are incorporated in fittings designed by the architect. The thin metal frame supporting the galleries into which the reflectors are seated is suspended by piano wires from the ceiling fixing. The silk covered electrical feeds to the individual lights are draped chandelier fashion.

36. chairman's seat.

37. ground floor main entrance hall showing the lift fronts. The slats are European oak, and lift cars are lined out in an identical manner. The reveals to the lift entrances are iroko. Hall lanterns, indicator plates, pushes, etc., are integrated with the slat arrangement. Landing doors to lifts are cellulosed silver-grey. The floor is Sicilian Pearl marble.



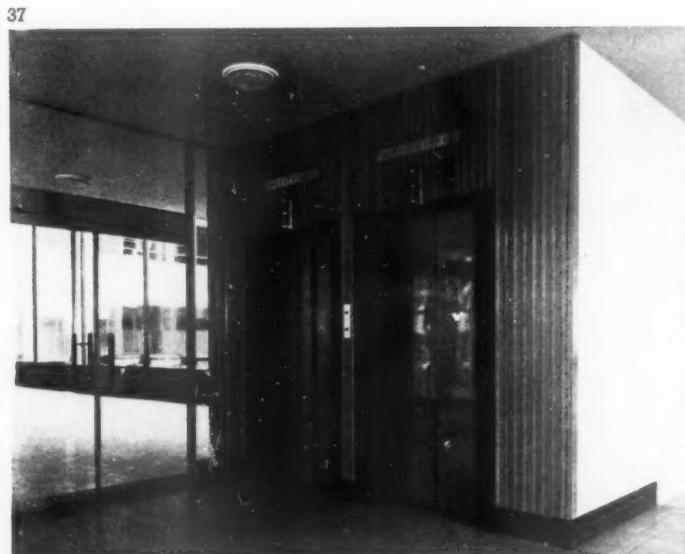
35

38. council chamber furniture. Detail—see description of materials, etc., given against captions (23), (24) and (25). The furniture has been designed by the architect in consultation with Heal's Contracts, who made it.

39. telephone booths off lift hall serving council suite. The veneer to the booths, externally and internally, is agba; the floor is dahoma.



36



37

39



38

Gordon Cullen

# STREET LIGHTING

In this article we are concerned with the impact of a modern public lighting installation on towns and not, primarily, with the design of fittings<sup>1</sup>. Naturally it is impossible to disassociate the two since, as in all townscape, we are concerned with two aspects: first, intrinsic design and second, the relationship or putting together of things designed. Still, for the time being let us give thanks to the hard work put in by the Council of Industrial Design on the improvement of fitting design and concentrate here on the total effect of installations.

There are two sides to the problem.

1. The lighting engineer's requirements.
2. The demands of amenity or townscape.

Recent (post-war) installations in Great Britain are based on the principle of silhouette vision or surface brightness of the road. To imitate daylight—whereby the road surface and objects on it are seen three dimensionally and in colour—being economically impossible the alternative is, using a lower intensity of light, to reflect light off the road surface evenly so that any object on it is seen as a silhouette which the eye can interpret as man, dog, car, hazard, etc. (As set out in the British Standard Code of Practice CP. 1004:1952).

The system relies on the even illumination of the road surface; there must be no pools of darkness. To achieve this the light sources must be placed and sited with some accuracy in relation one to the other especially on curves.

Height, overhang and siting begin to have a certain inevitability. Add to this the Code of Practice recommendations relating to mounting heights (of lanterns) for Group A (25 ft. 0 in.) and Group B (15 ft. 0 in.) roads and we have in all its authority and inevitability

a modern lighting installation, which marches through a town like a posse of soldier ants.

Now turn to the townscape side of the problem. There is an obvious incompatibility between the ruthless and rigid installation and the actual condition of our towns and villages. Broadly speaking there are three demands which the townscape puts to the engineer.

- To achieve. (1) Unity of scale
- (2) Kinetic unity
- (3) Propriety.

**Unity of scale:** The installation should be in scale with the street or environment. To flout this rule will result in an installation either drawing attention to itself by reason of its overpowering height or bulk and making the buildings appear silly and doll-like, or as in the case of Kingsway, failing to make that contribution to the intricacy of the scene (which a good installation ought to do) by being too small, and insignificant.

**Kinetic Unity:** By this is meant the unity of movement. Most installations, of course, are in streets which to a large extent express motion in a straight line. But as students of Townscape are aware there are many other kinds of urban enclosure; square, crescent, circus, focal point, closure, etc., which express a static feeling. In such places it is important that the installation, especially by daylight, should not disrupt and destroy this static quality by driving a monument to motion through them.

**Propriety:** There are times and places where it is difficult to reconcile an orthodox installation with the scene at all. One thinks of some new bridge, a piece of reinforced concrete sculpture, and try as one may the orthodox illumination by means of light sources placed on posts seems to destroy the scene. One thinks

<sup>1</sup> To be dealt with in a technical article in the REVIEW for March, 1958.

also of such places as the Radcliffe Camera group in Oxford and again finds it hard to reconcile ordinary practice with the particular case. In other words, as our examples will show, from time to time some solution out of the ordinary is called for even if it means some sacrifice and a challenge to ingenuity.

If, therefore, the townscaper puts these points forward as essential for the creation and preservation of urban values and at the same time the lighting engineer maintains that 'efficient lighting' comes first and no compromise is possible then we have reached deadlock. Fortunately the situation is not static. Even assuming the continued validity of silhouette vision the insistence, in the Code of Practice, of 25 ft. 0 in. and 15 ft. 0 in. mounting heights for lamps for Group A and Group B roads respectively appears to be the imposition of a rule rather for the sake of having a rule than anything else. Quite clearly the essential is to achieve uniform surface brightness not to say how this is to be achieved. However, the system met its Waterloo at Marlborough (Wilts) where a precedent was created. Although the High Street is a Group A road the light sources were mounted at a height of 20 ft. 0 in. in order to preserve unity of scale at the insistence of the Royal Fine Art Commission. Furthermore, silhouette vision is, in itself, an unsatisfactory form of illumination. If one silhouette is behind another silhouette then only one shape can be

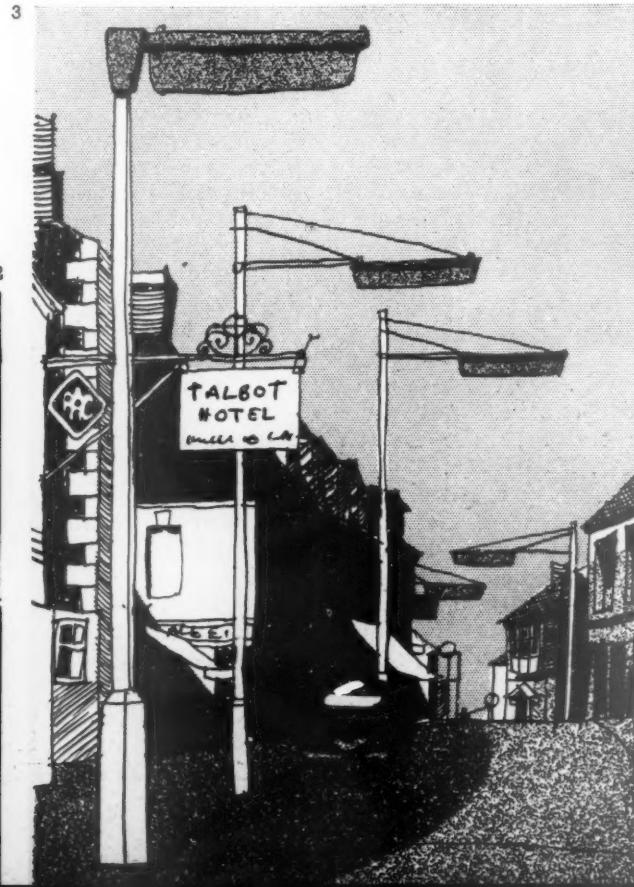
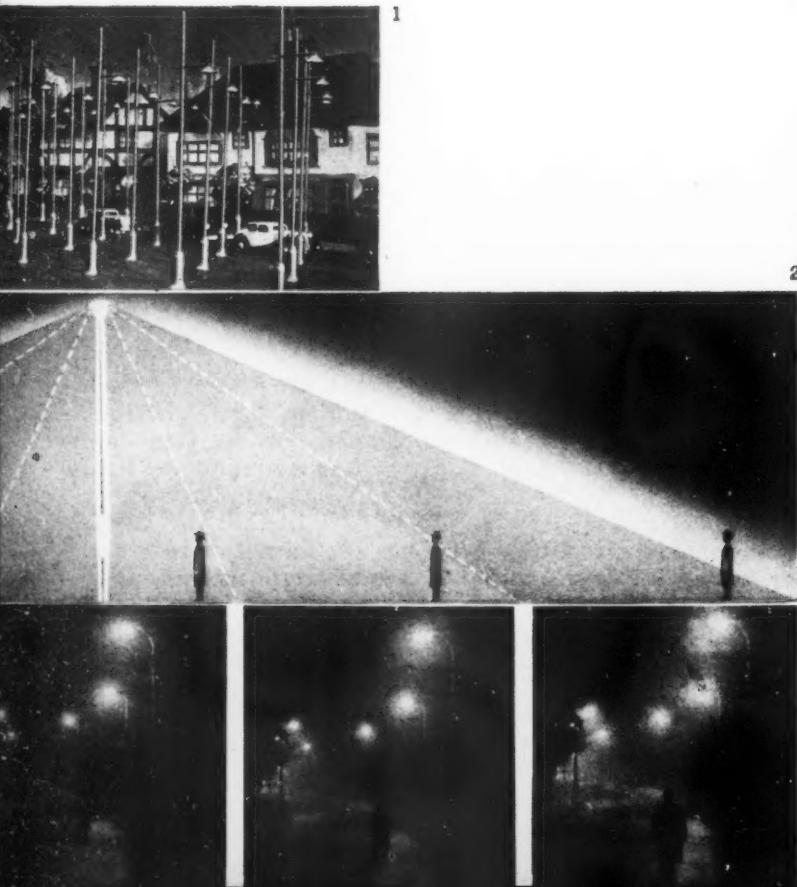
seen and thus we get the danger of motorists being unable to anticipate people stepping out from behind buses. But already more powerful light sources are being marketed which approximate much more to normal three-dimensional vision. The advent of these light sources must surely challenge the whole intricate structure of silhouette vision layouts. For the more abundant the light the more flexible one can afford to be with the installation layout.

What, in fact, the moral of all this is now becoming clear. What we put forward is a plea for flexibility. Once the lighting engineer understands townscape, the urban scene, then he immediately responds, he manipulates light. For no one knows better than the engineer just how flexible his solutions can be. To regard the design of a lighting installation as an exact science is, I think, putting it a little high resulting in doctrinaire decisions. To regard an installation as a separate piece of construction to the fabric of the town will inevitably result in abuse and lost opportunities, and to regard the light as being of a different kind of light to that provided by shop windows, flood-lighting, private lighting and so on can only result in sterility of scenery.

What we need to do is to integrate street lighting with the fabric and character of the town, both by day and by night, to manipulate light and the light sources in the full knowledge and love of our towns and cities.

## 1. THE CODE OF PRACTICE

Silhouette vision whereby the surface brightness of the road reveals objects on it as a silhouette is admittedly second best. To illuminate in three dimensions was regarded as impractical; 1, shows the absurdity of trying to achieve normal vision by artificial lighting. Hence the Code of Practice based on Silhouette Vision, 2, and its often brutal and insensitive impact on towns, 3. This is the world where everything is its own law and where nothing is seen in relationship.



## 2. THE TOWNSCAPE UNITIES

## scale

4



5



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8



9

## movement

10



11

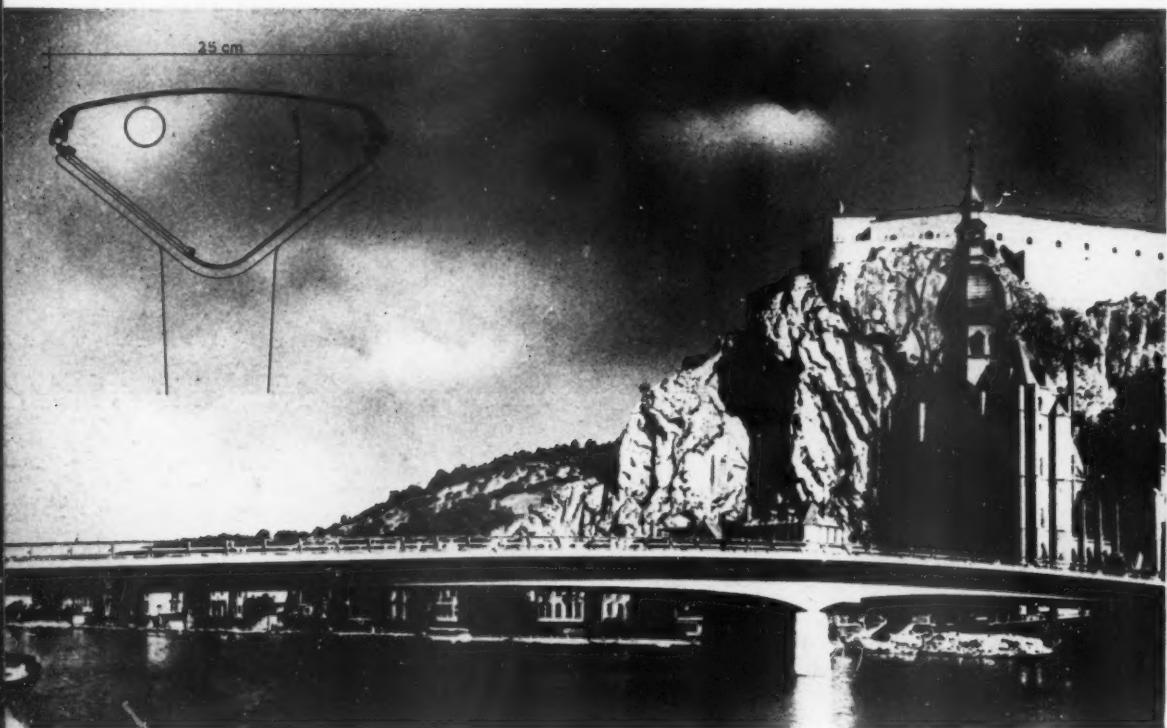


Kinetic unity is perhaps more complex to appreciate but of vital importance to the impact of the environment. Below, 10, we see a village scene, the shopping street is given enclosure (a sense of personality) by the re-entrant buildings and beyond the bridge the vista is closed by trees. The scene is static whereas the installation, 11, bores a hole right through it. The kinetic unity is broken.

**the Townscape Unities (cont.):****propriety**

There are cases where the orthodox installation is not wanted at all, where the purity of the scene cannot be improved by an installation yet light is needed. At the Pont du Carrousel in Paris they have lights on telescopic masts which are raised at night. Below, 12, on the bridge over the Meuse at Dinant the lighting is built into the handrail (see section). At the Radcliffe Camera in Oxford, 13, one would like to see the only possible solution, floodlighting, 14. All these various solutions will in fact cost a little extra. We expect that flexibility of approach for the vital 5 per cent.

12



13



14

**3. TOWARDS FLEXIBILITY**

Once the basic townscape is appreciated then the drive towards flexibility begins. New and powerful light sources, 15 and 16, are making the theory of silhouette vision obsolete. Marlborough has recently installed 20 ft. light fittings, 17 (as opposed to Code of Practice 25 ft., 18.) 19 and 20 show that the road surface can be evenly lit with lamps at varying heights.

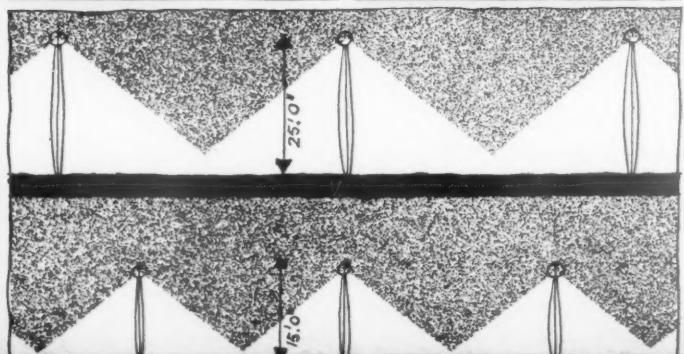
15, 16



17



18



19

20

## 4. FLEXIBILITY

From Vienna we quote Dr. Leopold Fink, on the exact placing of lights: 'The shadows under the canopy and on the steps introduce the shaping quality and the light on the flowers the friendly element in this picture. Any change in the position of the lamp would spoil this impression. The experienced man in charge of town lighting should know the locations where such effects can be achieved. He will know them when he loves his town and his task.'



21



22



23



24

The two pictures above, 22 and 23, show the same scene with different lighting effects. From left to right:

Road with 20 ft. columns so that trees can be preserved. Vista closed by stain glass church window.

35 ft. vertical lantern acting as beacon at main cross roads for motorists.

Wall-mounted lights on small foreground building.

Church tower lit up by sodium fog lamps on traffic island.

Square in front of town hall lit by 25 ft. posts and wall-mounted lamps on bus station.

Floodlit advertising. Blocks of flats floodlit.

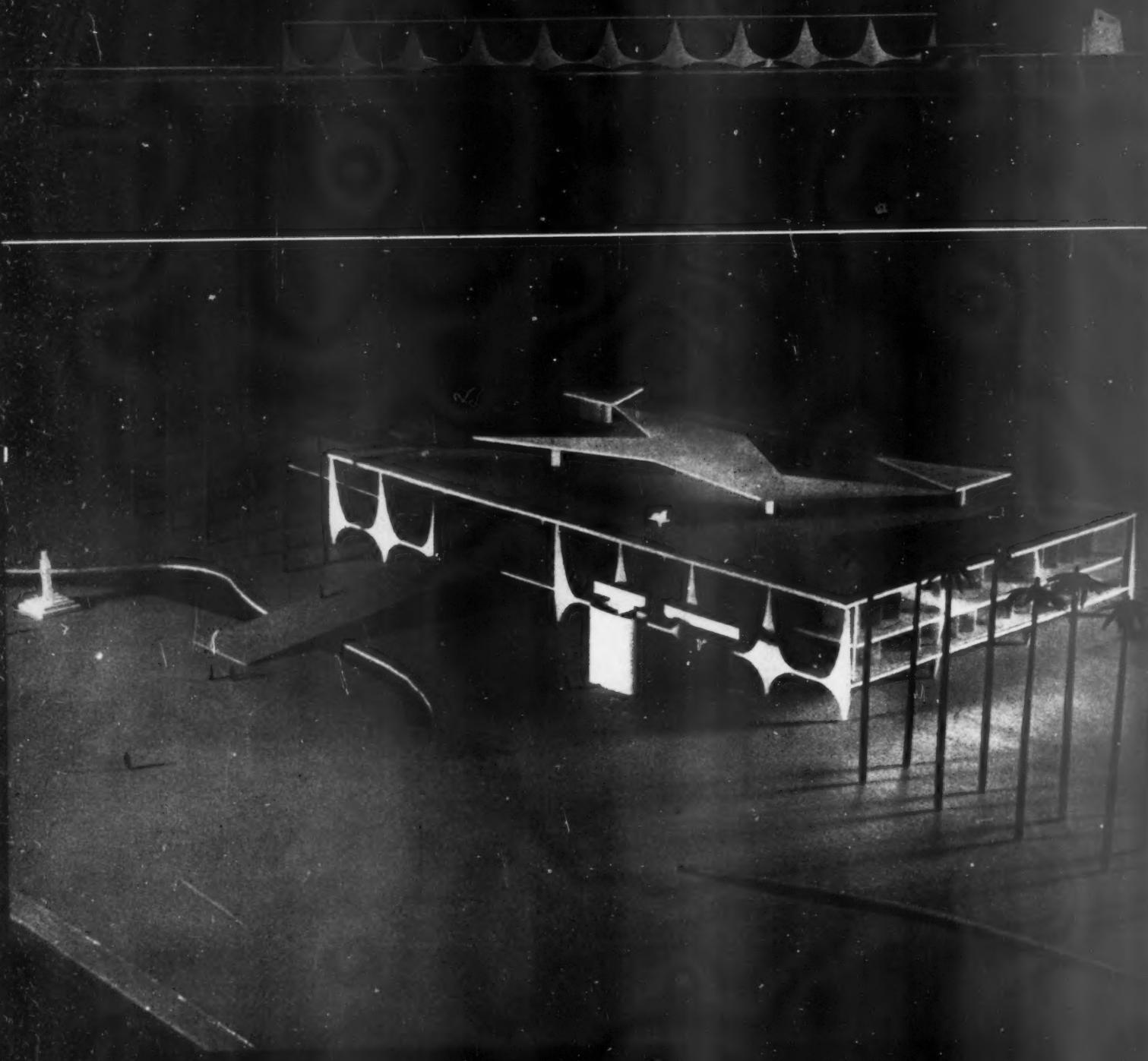
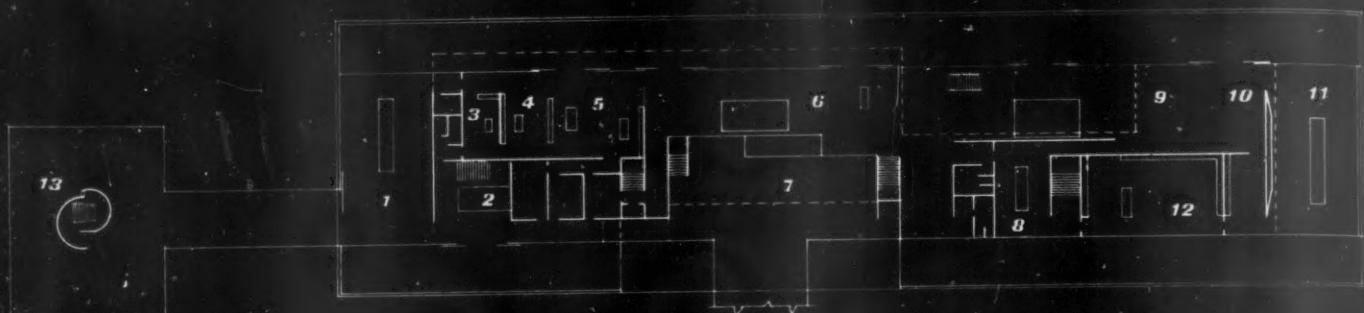
War memorial lit from below decorative water.

Curtain wall building carries built-in street lighting and is lit at night internally. The group of three pictures, left, 24, 25 and 26, shows in more detail the sort of variations in lighting effect that can be obtained; difficult to show in a photograph is the dimming effect whereby the street lighting is reduced in intensity after the heavy traffic has passed for the night.



25

26



Among the first buildings to be put in hand on the site of Brasilia, whose overall plan is described below by Sir William Holford, was the residency for the President of the Republic which, like the parliament buildings (see p. 366) has been designed by Oscar Niemeyer. The model shown in the upper photograph opposite gives the revised form of the residency design with the chapel annexed to it on the platform at the right, but the earlier version below gives a better idea of the plastic effect of Niemeyer's newest variations on concrete structure.

Keys: 1, cabinet room. 2, waiting area. 3, presidential secretary. 4, president. 5, library. 6, hall for receptions. 7, entrance hall. 8, breakfast room. 9, music. 10, bar. 11, dining room. 12, kitchen. 13, chapel.

William Holford

# BRASILIA

## A NEW CAPITAL CITY FOR BRAZIL

Rio de Janeiro is now a very overcrowded city of  $2\frac{1}{2}$  million inhabitants, where enormous granite rocks plunge into the Atlantic and, in between, the high buildings stand together in the fashion of the Giants' Causeway. It did not become the capital of Brazil until 1763. In 1888 (the same year that saw the setting up of the London County Council) slavery was abolished in Brazil; and the next year the Emperor Pedro II abdicated and the Republic was proclaimed. The republican constitution provided for the building of a new capital city.

Much had to happen before this could come about. Growth and surplus growth, wealth and surplus wealth, had to accumulate. Manufacturing industry and building capacity had to develop. Earth-moving machinery, automobiles and oil had to be imported. Most important of all, an architectural revolution had to be experienced and the whole climate of opinion changed. How suddenly it changed can be seen in the centre of Rio, where two buildings designed at the same time stand side by side, representing the old world and the new. One is the Ministry of Finance; the other is the Ministry of National Education whose *compère* was Le Corbusier, and whose *chef d'orchestre* was Lucio Costa—the same Lucio Costa who, in 1930, had been for a few electric months Director of the National School of Fine Arts, and later foremost among the architects disqualified in the competition for the design of the Ministry building. After 1936 new buildings appeared which had no precedents in nineteenth and early twentieth century architecture in Brazil.

Belo Horizonte, which had been founded as the State capital of Minas Gerais in 1897, grew into a modern metropolis, with a population of 350,000, in twenty years. São Paulo broke every link with the past, and became the fastest-growing city in the world. And

at last, to mark the coming of age of the architectural revolution in Rio in 1936, the Brazilian Government took steps to leave it and to plan the new capital on an upland site 600 miles to the north-west, in the State of Goiás, for a population of half a million.

The press, firmly established in cosmopolitan Rio, were on the whole opposed to this idea, and said so. The project was criticized as unnecessary, uneconomic and unfortunate. But conditioned as they are by the achievements of the last twenty years, they did not suggest it was impossible. And the Government clearly wanted to be master in its own house. Rio is overbuilt. The traffic congestion at the peak hours is worse than London's, noisier than Rome's and far more lethal in its effects than that of New York. Ordinary civil servants may live fifteen miles from their offices and even then spend a third of their income on rent. Meanwhile enormous potential wealth, in agriculture, stock, minerals, waterpower and other natural resources, remains untapped for lack of centres of communication, marketing and culture, in the partly unexplored hinterland of Brazil.

So, despite the criticisms, the President of the United States of Brazil willed the new capital into being, appointed a Commission to settle its precise location, and created a Development Corporation, under the dynamic direction of Dr. Israël Pinheiro, to build it.

Since the 1930's, architecture in Brazil had once more become the Mistress Art. Designers achieved something like the glamour of poets in Elizabethan England, or musicians at Salzburg or film directors at the Cannes Festival. They had begun to influence painting and sculpture and landscape and engineering, the making of furniture and fabrics and tiles. The past they looked back to was not in the previous century but in the eighteenth—the culmination of the Jesuit influence—when men like the architect-sculptor Antonio Francisco Lisboa, known as the Aleijadinho, designed Baroque churches with great plastic and emotional content, and furnished them, and carved wonderfully moving figures to decorate them.

The new movement was subject to discipline, but impatient of control from without. An inner artistic code replaced the religious order of the eighteenth century, and this had nothing to do with regulation by governmental or local authority. 'Planning,' in the western European sense, came to be regarded as an administrative device for promoting competition among architects; and its police functions—like most police functions in Brazil—were tolerated but not respected. Confronted by a difficulty, the architect and his client will both say 'There is a way round it!'

The result, in the development of town and countryside, has been very unequal. There are groups of buildings, housing estates, exhibition layouts, highways and entire man-made landscapes, which lift the heart and stimulate the imagination. And there are slums and suburbs, prairie towns and mad metropolitan muddles, which make one long for the Town and Country Planning Act of 1947 and a corps of devoted and anonymous planning officers.

Now, suddenly, the creative discipline of the architect is to be invoked on an

enormous scale. Brazil is confident that an entirely new town, an administrative and federal capital, can emerge, fully appointed, from the designer's brain and become a metropolis within one generation.

The precedents do not provide much help in deciding whether such an enterprise is possible, and if so whether it could be successful. Plato conceived a complete city of about 5,000 citizens, and many of the humanist writers and architects designed ideal towns, some for limited and some for unspecified populations. James Silk Buckingham in 1849 wrote a detailed prospectus for a model town which he called Victoria, to accommodate no more than 10,000 workers and their families. But Chandigarh, post-war and post-partition capital of the Punjab, in India, is being planned for 150,000 people in the first instance, with the expectation of growth to a much higher figure later on.

Meanwhile the new and satellite towns of Britain and the USA are building to intermediate population targets; they range between 20,000 and 80,000. The first of those built under the British New Towns Act of 1946 are now ten years old and not quite half as big as they have been planned to be. Socially and economically they stand a good chance of succeeding in what they set out to do. But they are in no sense metropolitan, except as constituents of the metropolis of Greater London; nor are they likely to become regional centres. Much has been learnt about administration and estate development, about schools and neighbourhood units and housing in a domestic landscape. But the greater challenge has not been taken up. In a western Europe recovering from war damage and faced with overwhelming problems of urban renewal in a hundred old cities at once, the ideals of Plato or Alberti or Le Corbusier have had no chance to bear whole fruit.

The problem facing the President of the Republic of Brazil, Dr. Juscelino Kubitschek da Oliveira—to give him his full name—is to hitch all the practical machinery, and the state and private investment required for a new town, to an ideal plan on an unprecedented scale. The Federal Commission on the Location of the New Capital, under the presidency of Marshal José Pessoa, had already surveyed the Federal District and received a technical report from Donald J. Belcher and Associates, a firm of development engineers from Ithaca, New York, who with the help of Brazilian officials and a number of consultants from Cornell University had specified five possible sites for the Capital City, and established their rating on the basis of a whole list of physical criteria.

President Kubitschek then appointed a Commission, on the lines of a Development Corporation, to take over the selected federal site, build the new capital and transfer federal and diplomatic premises, with the majority of their officials, from Rio de Janeiro. At the same time he asked Oscar Niemeyer, who had designed so many buildings for him when he was Governor of the State of Minas Gerais, to build two token structures within a park area or reservation within the capital site: one is the President's Palace itself, the White House of the United States of Brazil; the other is a Government Guest House or Hotel.\*

The President also asked his architect to make sketch plans for the layout of the capital; but Niemeyer advised him and Israël Pinheiro (who heads the Development Corporation) to hold instead a preliminary competition of ideas from among Brazilian architects, engineers and

\* Both are now well on the way to completion. The design for the Palace, known familiarly as 'Oscar's Cardiogram,' shows the latest development in the series of *pilotis* which Niemeyer has used to support or suspend the free floor areas of his buildings.



The congestion, and absence of space for expansion, within the large cities such as Rio de Janeiro and São Paulo forced the government to plan the New Capital.

town planners. In view of subsequent events it is worth putting on record this very significant fact. Although everyone was impatient to begin, and although the difficulties of establishing equitable conditions of competition, and adequate information, were well understood, administrative pressure was deliberately held back to enable an architectural idea of the form and character of the New Capital to be born first.

This was a notable decision. Oscar Niemeyer became Director of the Department of Architecture and Urbanism to the Capital Development Corporation and, as such, one of the national assessors of the competition for a *Pilot Plan*.

The conditions were issued in September, 1956. They were, perhaps, the simplest ever issued for a competition of this size. Competitors were given a good deal of information and were asked to visit the site when they had studied the maps, charts and aerial mosaics supplied at various scales from 1:2,000 up to 1:50,000. But they were asked to hand in only two essential documents:—

(a) 'A basic layout of the city, indicating the position of the main items of the urban structure, the location and interconnection of the various sectors, centres, installations and services, the distribution of the open spaces and lines of communication, to the scale of 1:25,000.

(b) A supporting report.'

The programme indicated other subjects which competitors might consider relevant to the pilot plan and which might be within the specialist capacity of members of the competing groups; e.g. agricultural economics, natural resources, land tenure, water and power supply, employment opportunities, and the planning and investment required at different stages for what was called 'progressive balanced development.' But it was made clear that these items would require deeper research and a wider experience than the competing groups could bring to bear in the short period of six months terminating on March 11, 1957. They could only be estimates of function to support the central idea of form. The jury was to have the President of the Development Corporation, Sr. Pinheiro, as its non-voting chair-

man, a representative from the Institute of Architects of Brazil (Paulo Antunes Ribeiro), a representative from the Society of Engineers (Horta Barbosa), two representatives from the architectural and town planning department of the Development Corporation (Oscar Niemeyer and Stamo Papadaki), and two town planners from abroad—(André Sive from Paris, and myself from London).

\* \* \*

From this point my narrative becomes largely personal. For one thing the report of the Jury, which was made at the end of March, was not unanimous. It was signed by six out of the seven members, accepted by the President of the Republic and by the Development Corporation and duly published. But the representative of the Institute of Architects made a minority report, asking for the combined premiums of 2,400,000 Cruzeiros (about £6,000 at one of the official rates of exchange) to be divided equally among the ten leading competitors, and also for the disqualification of the design placed first on the grounds that it was too slight to be considered. It was apparent that the Institute favoured the farming out of the capital works to leading architects and regarded the competition as the second best method of securing a short list.

For another thing, the jury was involved from the start in almost continual discussion with press, public, competitors, and officials, even over the period of judging. There was none of the judicial calm, secrecy and detachment which surrounds the deliberations of a jury in this country. And our decisions had to be justified at some length, both verbally and in writing. At one point I gave up keeping records of our discussions, as it saved time to read them in the newspapers the following morning.\*

It was soon clear that it was the foreign members of the jury who were being asked, presumably as the most disinterested and impartial judges, to tip the balance in favour of one scheme as against another. So that once again a very personal ap-

proach was required; and it is for that reason also that the following comments are written in the first person.

I realized as soon as the submissions were handed in that our choice would lie between breadth and depth. There was imagination in plenty, both of the practical and the theoretical kind. But whereas some competitors had concentrated on what might be called the ideology of the design, illustrating their idea by a sketch plan and some significant diagrams, others had widened their appreciation of the problem to include details of agriculture and manufacture, of building costs and returns, of local government and community organization.

The best of these, and the most complete, was the entry by the firm of M. M. Roberto. The ideas behind this astonishing presentation, which ran to scores of drawings and a full report that took 12 hours of concentrated effort to absorb, are set out trenchantly in a full-page interview of Marcelo Roberto recorded in the *Correio da Manha* of March 24, 1957. I can only say, for my part, that I have never seen anywhere in the world a more comprehensive and thoroughgoing master-plan for a new capital city on a cleared site. We all realized, at the same time, that if the Development Corporation adopted this plan they would take on board more than a pilot. They would have purser and quartermaster and bo'sun, a complete ship's company from cabin boy to captain, and a Director of the Line as well. The principle of the plan is to break down the metropolis into self-contained *unités d'occupation*—seven to start with, each with a main government activity in its business district; then ten; ultimately perhaps fourteen. The Federal Government Centre, detached from these hexagonal model towns, remains the same. The 'regional city' is established, as it were, by decree. After admiring this scheme for several days, my own feeling was that everything in it was worthy of admiration, except its main objective. It was not an Idea for a capital city.

At the opposite extreme was the submission by Lúcio Costa. Here was an Idea and the skeleton of a metropolitan form—and practically nothing else. Presented on five medium-sized cards (which included

\* Although one soon began to translate the written language and to understand the meaning of paragraphs in the press, the spoken word often required an interpreter. So did most of the competitors' reports, as only three of them had English or French versions. I can therefore only give my own impressions of what went on.

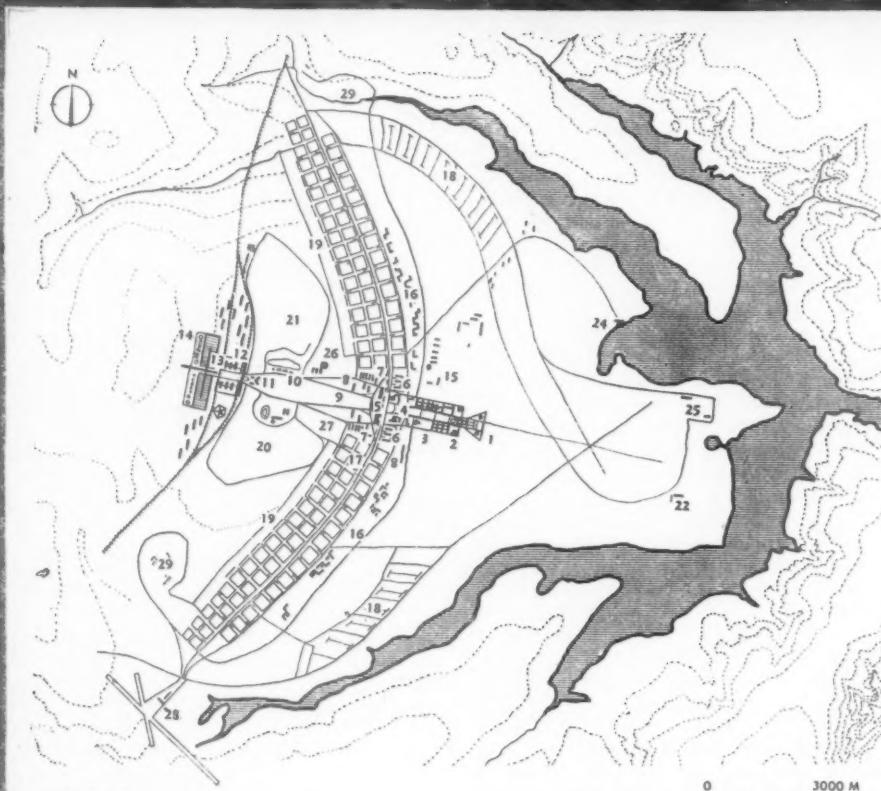
the short report) and without a line of mechanical drawing, no models, no land-use schedules, and no population charts, the entry went some way to justifying the criticism of Paulo Antunes Ribeiro that it was hardly worth consideration by a serious jury. And yet, at the first reading of his report, one realized that here was a thinker, an urbanist, of the first order. On second reading one realized that there

was not a single unnecessary word in the report, and not a single unnecessary line in the sketch plan or diagrams: yet everything essential was said. And on further reading this member of the jury, at least, became more and more convinced that the direction of advance for a great administrative capital had here been indicated in a masterly way, and the fundamental problems of communication, urban resi-

dence, metropolitan character and richness of growth within a unity of artistic conception, had all been recognized and anticipated.

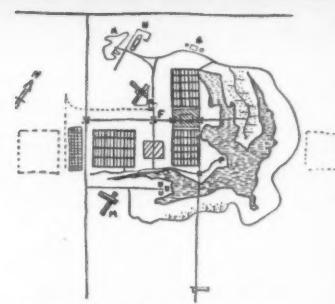
Lúcio Costa's report is so good that it can hardly be summarized. Even to me, who am no Portuguese scholar, the original version was immediately lyrical and striking; and even the translation (which is given here in full) is good enough to

[continued on page 402]

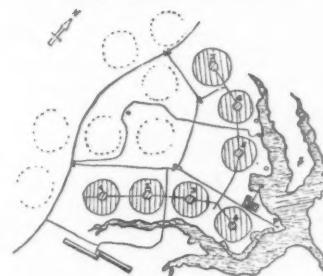


1st prize: Lúcio Costa

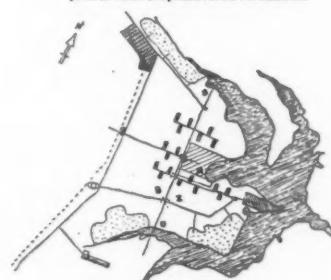
1, parliament. 2, ministries. 3, cathedral. 4, cultural area. 5, recreation centre. 6, banks and offices. 7, commercial area. 8, hotels. 9, radio and television centre. 10, stadium. 11, town squares. 12, private dwellings. 13, railway station. 14, craftsmen and small industries. 15, universities. 16, embassies and legations. 17, residential zone. 18, detached houses. 19, gardens. 20, botanical garden. 21, zoo. 22, golf club. 23, yacht club. 24, residential area. 25, bus station. 26, site for fairs, circuses, etc. 28, airport. 29, cemetery.



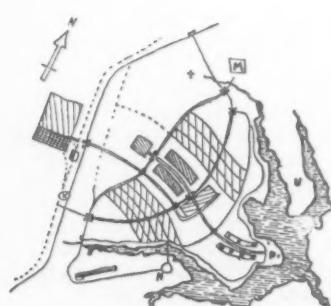
2nd prize: Baruch Milman, José Henrique Rocha and Hély Gonçalves.



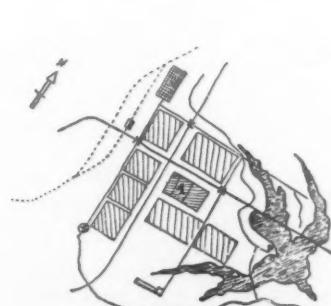
Joint 3rd and 4th prize: M. M. M. Roberto.



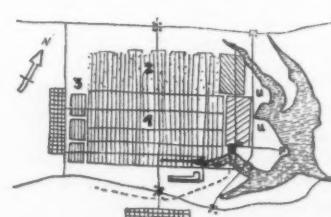
Joint 3rd and 4th prize: Rino Levi, R. Carqueja and L.-R. Carvalho Franco.



5th prize: Henrique Minelli and Giancarlo Palanti.



6th prize: Construtecnia S.A.



8th prize: C. Cascaldi, J.-V. Artigas, M.-W. Vieira, P. da Camargo and Almeida.

**Lucio Costa's prizewinning report and accompanying sketch designs:**

In 1923, José Bonifácio suggested transferring the Capital of Brazil to Goiás, and rechristening it Brasília.

First of all, I should like to apologize to the Directors of the Development Company (Novacap) and to the Jury of the Competition, for the sketchy manner in which I am submitting the idea which I have followed in my suggested outline plan for the new Federal Capital; and at the same time, I must justify myself.

It was not my intention to enter the competition—nor indeed, am I really so doing. I am merely liberating my mind from a possible solution which sprang to it as a complete picture, but one which I had not sought.

I therefore come forward, not as a properly equipped expert, since I do not even run an office of my own, but as a mere *maquisard* of town planning who does not even mean to continue working out the idea offered in this report, save perhaps as a consultant. And if I speak with such candour, it is because I base my reasoning on this simple assumption: if my idea has any validity, my idea—although given apparently in such a sketchy manner—will prove quite sufficient, showing that despite its spontaneous origin, I subsequently gave it a great deal of thought before reaching this solution. And if the suggestion has no validity, then the Jury will find it easy to eliminate it, and I shall not have wasted my time, nor that of anybody else.

Since there were no restrictions in the way of entering the competition, there was less possibility of consulting the Development Company on what is, in fact, a point of great importance: namely what, from a planning standpoint, they think this city should be—since in this instance it will not be the outcome but the cause of the regional plan. For this is a deliberate act of possession, the gesture of pioneers acting in the spirit of their colonial traditions: and each competitor is, in effect, being asked how he conceives of such a city.

It should be conceived of, I believe, not as a mere organic entity, able to function effortlessly and vitally like any modern town; not as an *urbs*, therefore, but as a *civitas*, having the virtues and attributes appropriate to a true capital city. To achieve this, the town planner must be imbued with a certain dignity and nobility of purpose—for it is from this basic attitude of his that must spring the sense of order, fitness and proportion which will confer real monumentalism on his urban scheme. I use the word not in the sense of ostentation, but as the palpable and conscious expression of true value and significance. He must design a city in which

orderly and efficient work may be carried out; but also a city of vitality and charm, conducive to reverie and intellectual speculation, capable of becoming not only the seat of Government, the administrative headquarters of the nation, but also a centre of culture which will attract to it the finest and most perceptive intellects in the country.

And now let us see how the plan was born, outlined, and developed to its present conclusion.

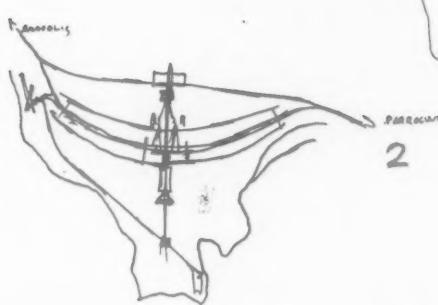
It was born of that initial gesture which anyone would make when pointing to a given place, or taking possession of it: the drawing of two axes crossing each other at right angles, in the sign of the Cross, 1. This sign was then adapted to the topography, the natural drainage of the land, and the best possible orientation: the extremities of one axial line were curved so as to make the sign fit into the equilateral triangle which outlines the area to be urbanized, 2.

Finally, it was decided to apply the free principles of highway engineering, together with the elimination of road junctions—to the technique of town planning. The curved axis, which corresponds to the natural approach road, was given the function of a through radial artery, with fast traffic lanes in the centre and side lanes for local traffic. And the residential district of the city was largely located along this radial artery, 3.

As a result of this concentration of the city's housing, it seemed logical to dispose the other important centres along the transverse radial artery, which thus came to be regarded as the monumental radial artery. Here, then, are located the Civic and Administrative Centres, the Cultural Centre, the Entertainment and Sports Centres, the Town Hall and other Public Buildings, the Barracks and the zones designated for warehousing and supply, local light industries and the railway station, 4. At the intersection of the two arteries, but functioning essentially as part of the organization of the monumental radial artery, are the banks, the finance corporations, big business buildings and offices housing the liberal professions as well as extensive markets and shopping centres.

Since the monumental radial artery underpasses the residential radial road, it was necessary to create a spacious platform, to be kept clear of all traffic not specifically intending to park there. The quiet refuge of this platform makes it the logical site for the Entertainment Centre where cinemas, theatres and restaurants are grouped together, 5.

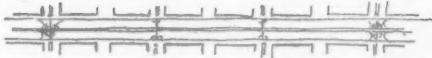
Traffic heading for the other parts of the city flows down in a one-way stream to the lower level roofed over by the platform. It is thus sandwiched as it were between two platforms, with the sides left open. The 'under-platform' will also house a large car-park and here too is the



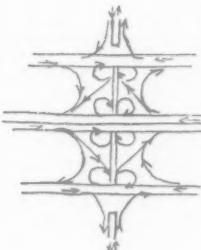
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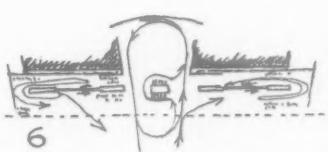
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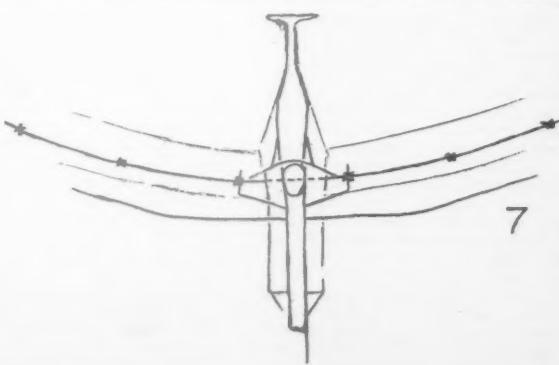
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5



6



7

Interurban Transport Centre—a building reached by passengers from the upper platform, 6. Only the fast traffic lanes, already underground, dive below the centre of the 'under-platform' which spreads down the hill until it reaches the Esplanade on which the Government Buildings are located.

Thus, with the creation of three complete clover-leaves in each arm of the residential radial artery, and of an equal number of underpasses, car and bus traffic will flow unimpeded through the central and residential districts, and with no road intersections. An independent and secondary traffic system has been worked out for heavy vehicular traffic; it has crossings marked by traffic lights, but does not communicate with the first system except beyond the Sports Centre. It has basement level access to buildings in the Shopping Centre, and it skirts the Civic Centre at a lower than ground level, with approach galleries tunnelled through the terraced embankment, 7.

Once a general network for motorized traffic had been established, an independent grid of safe-transit footpaths for pedestrians had to be organized, 8. However, separation of the systems of circulation must not be taken to unnatural extremes, since it must not be forgotten that the car, today, is no longer Man's deadly enemy; it has been domesticated, and is almost a member of the family. It only becomes 'de-humanized' and reassumes its hostile, threatening attitude, when it is reintegrated into the anonymous body of traffic. Then indeed, Man and Motor must be kept apart, although one must never lose sight of the fact that, under proper conditions and for mutual convenience, co-existence is essential.

Within the framework of regulated traffic, the separate areas are linked together to make one harmonious system; let us see how. The highlights in the outline plan of the city are the public buildings which house the Fundamental Powers. These are three, and they are autonomous: therefore the equilateral triangle—associated with the very earliest architecture in the world—is the elementary frame best suited to express them. For this purpose, a triangular, terraced embankment (terreplein) was designed: it will be supported on retaining walls of rough stone rising above the surrounding countryside, and can be reached from the ramp of the autostrada running between the President's Residence and the airport. At each angle of the triangular piazza—the Place of the Three Powers, as it might be called—stands one of the three buildings: the Government Palace and the Supreme Court at the base; the Congress Building at the tip. This building also fronts on to a wide esplanade on a second, rectangular embankment on a higher level, according to the local topography: the entire perimeter of this embankment is also supported on walls of unfaced stone. To transfer to present-day usage the ancient technique of the terreplein lends a certain harmony to the pattern and creates an unexpected and monumental strength, 9. This esplanade—the Mall as it would be called in England—is lined by a wide grass verge used by pedestrians and also for parades and processions; on to it front the Ministries and the Offices belonging to the Public Authorities, 10. The Ministries of Foreign and Home Affairs occupy the lower corner sites adjoining the Congress Building, and they are suitably landscaped; the War, Sea and Air Ministries face a separate

square, while the remaining ministries are sited in a row along the Mall, each with its private car-park. The last in the row is the Ministry of Education, making it adjacent to the Cultural Centre which is treated as a park so as to make it more effective as a background for the Museums, Library, Planetarium, Academies, Institutes, etc. Close to these is a wide stretch of land reserved for the University City, its General Hospital, and, later on no doubt, for the Observatory. Along the Mall, space has also been allocated for the Cathedral, but this will face its own piazza, not so much for reasons of protocol, since in Brazil the Church is separated from the State, but more because of the question of human scale and the need to give this building its monumental value. Another reason, even more important, is of an architectural nature: the Mall's perspective must be undisturbed up to a point beyond the central platform, where the two radial arteries cross each other.

On this platform, as we have seen, traffic is only local; and the Entertainment Centre—which has something in it of Piccadilly Circus, Times Square and the Champs Elysées—is situated on it. The side of the platform which overhangs the Cultural Centre and the Mall will not be built over, with the exception of the Opera House and a tearoom, reached directly from the Entertainment Centre, or through a lower-level passage from the Cultural Centre. The front of the platform will be lined with cinemas and theatres, all with the same low height regulations, so that if viewed as a whole, they will make an uninterrupted architectural mass, with arcades, wide sidewalks, terraces and cafés. The façades of the buildings provide a fine field for illuminated advertisements, 11. The theatres will be inter-connected by lanes barred to motor traffic, in the traditional manner of Rio's Ouvidor Street, Venetian alleys, or arcades which run into small patios where there will be bars and cafés. Behind the buildings, footpaths and lanes will lead to 'loggias' overlooking the park. The purpose of this careful planning is to provide pleasant surroundings for social gatherings and friendly intercourse. The street level of this theatred complex will be open and unobstructed except for the cores of access leading to the upper floors, so as to maintain an uninterrupted perspective. The upper floors will be glassed-in on both sides, so that the restaurants, clubs, tearooms, etc., may look on to the lower esplanade on one side, and on the other may have a view of the hilly park—an extension of the monumental radial artery on which the commercial and tourist hotels are located—and beyond this, of the imposing Radio-TV Tower, which is treated as a plastic element in the composition of the urban mass, 9, 11 and 12. Slightly to one side of the centre of the platform is the entrance hall of the Interurban Transport Terminal with its ticket-offices, bars, restaurants, etc. This is a low building connected by escalators with the lower departure hall which, in its turn, is separated by glass partitions from the departure quay proper. One-way traffic forces the buses to make a detour on leaving the road under the platform; this gives the travellers their last view of the monumental radial artery before the bus enters the residential radial artery, and is a psychologically satisfactory way of saying farewell to the national Capital. Also situated on the plat-

form (which, like the lower platform, will house extensive car-parks) there will be two spacious piazzas for pedestrians; one facing the Opera House and the other, symmetrically arranged, looking on to a pavilion overhanging the gardens of the Cultural Centre and consisting of a restaurant, bar and tearoom. In these piazzas the carriage roads are one-way only, and are raised for a good distance of their course, so that pedestrians may cross freely in both directions. They will also have direct access through the piazzas to the Shopping Centre, to the Banks and the Finance Corporations.

To one side of the Entertainment Centre and connected to it are the two great cores of the Shopping Centre, with their smaller shops and department stores, and also the other Centres which are quite distinct from these—the Banks and the Finance Corporations, and the Centre which groups together the big business firms and agencies, and the liberal professions. Here, respectively, are the Bank of Brazil and the General Post and Telegraph Office. These centres can be reached by car via the respective approach roads, and by pedestrians along sidewalks which avoid street crossings, 8. There are also two-level car-parks and basement entrances corresponding to the lower level of the central platform. Both in the Banking and Business Centres, the pattern of the building plan is to be three high-rise blocks and four lower ones, all interconnected by a wide street-level area with mezzanines, which will provide covered communication and ample space for branches of banks, business firms, restaurants, etc. In the Shopping Centre the pattern suggested is an ordered row of long buildings followed by one larger building, but all having a uniform height and all interconnected by a similar street-level area of ample proportions, for shops, mezzanines and arcades. Two raised branches of the road ringing this building group will give pedestrians access to each building.

The Sports Centre, with its extensive car-parks, is situated between the Municipal Square and the Radio-TV Tower. This tower is triangular and consists of a monumental base of unfaced reinforced concrete, stretching up to a studio and office floor, and of a metal superstructure with a look-out section half-way up, 12. On one side it overlooks the stadium and its pavilions, with the Botanical Gardens behind them; on the other, it has a view of the racecourse, grandstands, stables and ancillary buildings and, adjacent to these, the Zoological Gardens. The two great green parks, symmetrically laid out in relation to the monumental radial artery, are the 'lungs' of the new city, 4.

The Town Hall, Police HQ, Fire Station and Public Welfare Building stand in the Municipal Square. The Prison and Insane Asylum, though set apart at a good distance from the central built-up area, also belong in practice to the same part of the outline plan.

Beyond the Municipal Square are the City Transport Garages; and beyond them, on both sides of the monumental radial artery the Barracks. A large area which stretches across the artery from one side to the other will concentrate the warehouses, the local light industries and their own housing schemes; at the far end is the railway station which is also linked with one of the branches of the road for heavy vehicular traffic.

Now that we have travelled down the monumental radial artery from

point to point, we can perceive that its flexibility and compactness of pattern, 9, from Government Piazza to Municipal Square, do not exclude variety; and that each part appears to be individually important, forming a living, plastic organism in the overall planning scheme. Since each part is autonomous, it has been found possible to create spatial areas which correspond to a human scale, and the inter-relation between the great buildings does not detract from the contribution made by the architectural characteristics of each area.

As regards the problem of housing, the solution chosen was the arrangement of an uninterrupted sequence of super-blocks, in double or single rows, lining the residential radial artery, and with a wide green belt, densely planted with tall trees, round each super-block. Each one will give pride of place to one species of tree; the ground will be carpeted with grass, and shrubs and foliage will screen the internal grouping of the super-block from the spectator: who will get a view of the lay-out through a haze of greenery, 13. This will have the two-fold advantage of guaranteeing orderly planning, even when the density, category, pattern or architectural standard of individual buildings are of a different quality; and at the same time, it will provide the inhabitants with shady avenues down which to stroll at leisure, in addition to the open spaces planned for their use in the internal pattern of the super-block.

The residential buildings in the super-blocks can be arranged in varying manners, though always in obedience to two general principles: uniform height regulations—perhaps a maximum of six storeys above the pilotis—and segregation of motorized traffic and pedestrian transit, especially near the entrances to the Primary School and the urban amenities located in each super-block, 8.

Behind each super-block runs the service road for heavy vehicular traffic; on the opposite side of this are the garages, workshops, wholesale warehouses, etc., while an area equivalent to a third row of super-blocks is given over to flower gardens, market gardens, and orchards. Between the service road and the radial artery are extensive building spaces with alternating approach roads. It is here that the Church, the secondary schools, the cinema and the retail trade serving each neighbourhood are located, each according to category and classification, 13. The district market, butchers' shops, grocers', greengrocers', ironmongers', etc., line the first section of the traffic lane which corresponds to the service approaches; and the barbers' shops, hairdressers', dress shops, tearooms, etc., are concentrated along the first section of the accommodation road used by cars and buses; here, too, are the servicing and filling stations. The shops have plate-glass display windows, and they form rows along pavements protected by built-out canopies.

They face the wooded belts round the super-blocks that are only used by pedestrians, and also the belt on the opposite side of the road, adjoining the accommodation road. They are inter-connected by lanes and alleys, so that they are really semi-detached, although if viewed as a whole they appear to form one single composition, 14. Where each four super-blocks meet, there is a church, and behind it the secondary schools: the cinema is on the service road but facing the residential radial artery, so that those who come from other parts of the city may find it easy to reach. The space between these two main roads will be occupied by youth

clubs with their sports fields and play plots.

The social structure of this housing zone can be graded by setting a greater value on specified super-blocks, such as, for example, the single rows which adjoin the diplomatic quarter. This quarter stretches on either side of and parallel to the radial artery. It has a tree-lined accommodation road and a service road for heavy vehicular traffic—this latter shared with the other residential super-blocks. The tree-lined road, which is exclusive to Embassies and Legations, will only be built-up on one side; on the other there will be a free and unobstructed view over the landscape, with one exception—the most important hotel will be located here, since it is not far from the centre of the city. On the opposite side of the residential radial artery, the super-blocks fronting on to this will naturally be more valuable than those facing inwards: this, too, will allow of classification according to economic conditions in force at the time. Nevertheless, the four-by-four grouping of the super-blocks will, while favouring co-existence of social groups, avoid any undue and undesirable stratification of society. And, in any case, variations in the standard of living from one super-block to another will be offset by the organization of the urban scheme itself, and will not be of such a nature as to affect that degree of comfort to which all members of society have a right. Any differences in standard will spring from a greater or lesser density, a larger or smaller living-space allocated to each individual or family, or from the quality of building materials selected and the degree of finish which these receive. And since such problems are being raised, the growth of slums, whether on the city outskirts or in the surrounding countryside, should at all costs be prevented. The Development Company should, within the scope of the proposed outline plan, make provision for decent and economical accommodation for the *entire* population.

Provision is also being made for island sites surrounded by trees and parkland, to be acquired for individual houses. It is suggested that these plots should be staggered; thus the houses on the higher land will make a good pattern against the background of the landscape, since they will be built at a good distance from each other. This arrangement will make it possible for one service road to serve all the plots, 15. Also, the construction of some houses of a high architectural order (which does not necessarily mean that their cost will be exorbitant) has been seriously envisaged. In such cases, the regulations should specify a minimum distance between each house, of at least five-eighths of a mile (1 kilometre); this will emphasize the exceptional character of these private building concessions.

The city's cemeteries will be sited at the extremities of the radial arteries, so as to prevent funerals crossing the City Centre. They will be planted with grass lawns and be suitably wooded: the gravestones will be the simple, flat slabs used in England, the idea being to avoid any sign of ostentation.

No housing will be permitted round the lake: the area must be kept unspoilt. The lakeshore will be treated as woodland and parkland, and green spaces over which the citizens may walk and enjoy other countryside amenities. Only sports clubs, restaurants, playfields, swimming enclosures and fishermen's clubs may operate round the lake.

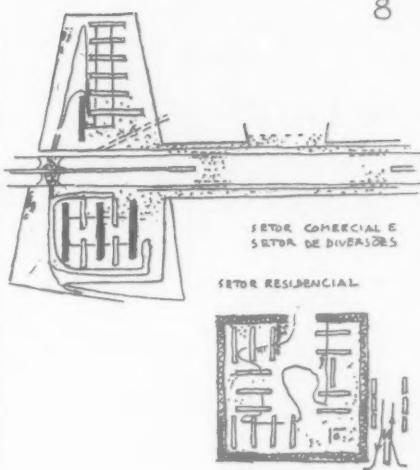
The Golf Club is already located to the east, near the President's Residence and the Hotel, both of which are now under construction; and the Yacht Club will be sited on a nearby creek. Small woods crossing these clublands will run down to the edge of the lake, which is ringed by a tree-planted avenue that sometimes wanders inland, and will later be landscaped with flowering plants and dotted with more trees. This ring avenue joins the residential radial artery and the approach autostrada running from the airport to the Civic Centre—a road to be used by famous visitors to the Capital city, although on their return they may with advantage use the residential radial artery. It is hoped that the final location of the airport will be on the near side of the lake, so as to obviate the need for crossing it or driving round it.

Street numbering should start from the intersection of the two axes—using the monumental radial artery as a point of reference to divide the city into two halves, North and South. The super-blocks will be given numbers; the buildings inside each, letters; and finally each apartment will be numbered according to usual practice. For instance, one address might be N-Q3-L apt. 201. The buildings will be lettered in a clockwise direction, from the entrance to each super-block.

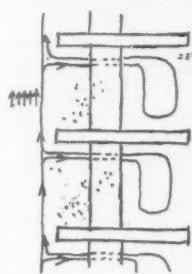
There still remains the problem of how to dispose of real estate and make it available to private capital. I feel that the super-blocks should not be subdivided, and suggest that not the land, but shares in the land, should be sold. The price of these shares would depend on the vicinity and the height regulations. This would overcome any obstacles standing in the way of present planning and any possible future re-planning of the internal arrangement in the super-blocks. Such a plan should preferably be worked out before the shares are sold; but there is nothing to prevent purchasers of a substantial number of shares from submitting their own planning scheme for a specified super-block to the approval of the Development Company. Nor is there anything to stop this Company, in addition to facilitating the acquisition of shares by other corporations, from itself functioning as a building corporation. I think, too, that the price of the shares should include a fixed percentage to cover the expenses of the project. In this way, good architects could be invited to submit designs and competitions could be started for the planning of those super-blocks which are not being developed by the Architectural Division of the Development Company. I would also suggest that two phases should be adopted for the approval of the various planning schemes: a pilot plan and a master plan—which would make selection and control of the quality of architectural solutions easier for the Company.

In the same way, advance planning should be undertaken before the final lay-out of the Shopping Centres, the Banking and Financial Centre, and the Big Business and Liberal Professions Centre is proceeded with. It would then be possible to divide them up into subsectors and independent units, without detracting from the harmony of the overall architectural pattern. The separate parts could then be put up for sale in the real estate market, while the total or partial construction of the buildings would be paid for by the interested parties, by the Company, or by both, working in collaboration.

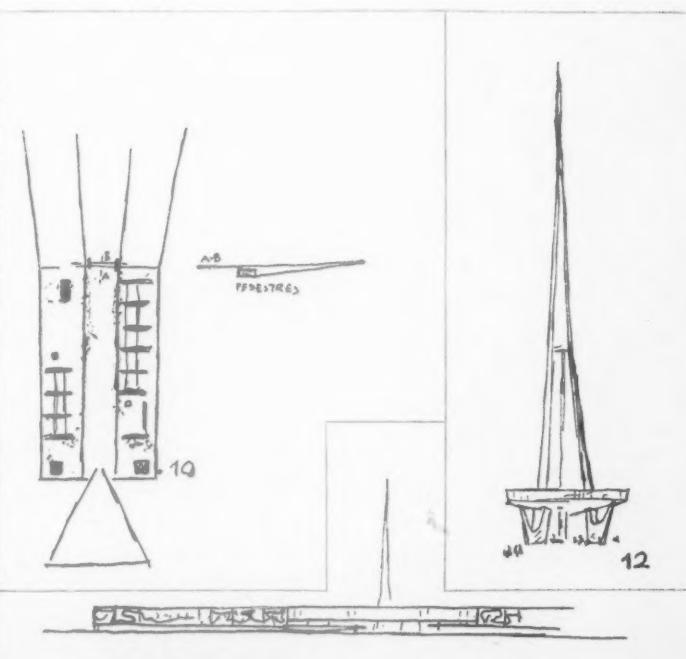
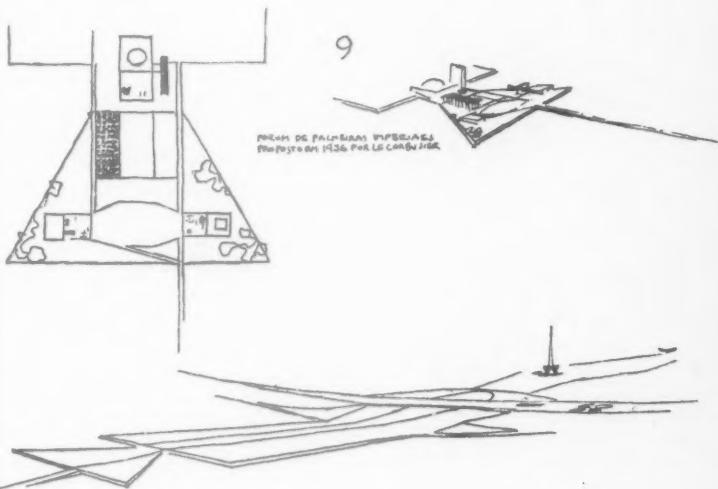
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SETOR DOS MINISTÉRIOS

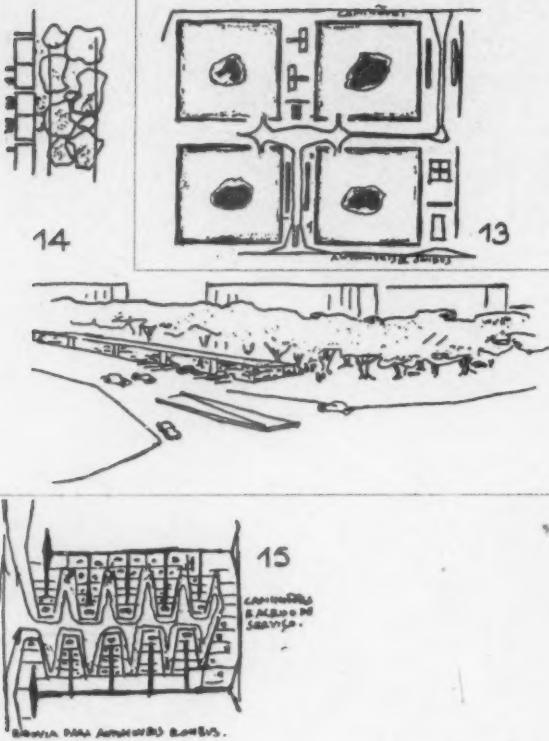


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stand by itself. All that I can usefully add is a brief note on the site and the programme, in an attempt to clarify some of the references and to enable those who have not had an opportunity of visiting Brazil to appreciate the significance of one of the most important civic competitions of recent times.

\* \* \*

The 'city' or building area of the Federal District in the State of Goiás is of about 150 square kilometres (say 37,500 acres). It is 3,000 feet above sea level, with an average annual temperature of 67 degrees, low humidity and no frost. It has an invigorating air; and as I stood on the gently rising ground whose centre and high point is now marked by a tall wooden cross (and which in Lúcio Costa's scheme is the site of the Radio-Television Tower) I felt that I was on the crown of the world. On the horizon, throughout the 360 degrees of circumference, one can see blue hills. On two sides of the roughly triangular site are converging rivers which are to be dammed at the apex, making a head of water for initial hydro-electric generation, and a permanent lake of about 40 square kilometres. The rock is low enough to give excellent foundations for big structures but not high enough to make underground services expensive.

Trees, once supplied with water on this kind of terrain, grow three times as fast as in England and there is nothing impossible in Lúcio Costa's idea of marking out neighbourhood units or building groups into squares, bordered by belts of trees and service roads, before building development takes place.

The São Francisco River, not very far from the site, is the spine of an enormous regional development scheme, including power generation, mineral extraction and manufacturing industry and will in time be made navigable right down to the sea. Air traffic is already highly developed in Brazil, and in Goiás I found more air-taxis than land-taxis. A runway and airport of international dimension is already constructed at Brasília, and there will be civil and military airports and air clubs in addition. The highway from Anápolis is now being improved and before long the railway will be extended from the existing railhead. (The railways, handed over by the British at the end of the war, are obviously inadequate, and remain a weak feature in the development of Brazil's resources.)

The population of the United States of Brazil, which at the beginning of the century was 18 million, is now virtually the same as that of the United Kingdom and is expected to reach 250 million by

To sum up—it is easy to grasp the criteria used in this plan for a capital city, since its characteristics are the simplicity and clarity of the original pattern. As has been shown, these factors do not exclude variety in treatment of the individual parts, each of which is conceived of according to the special nature of its respective function. The result of such treatment should be harmony, despite requirements which are apparently contradictory. Thus, though the city is monumental, it is also convenient, efficient, welcoming and intimate. At one and the same time it is spread out and compact, rural and urban—and its aims are lyrical and functional. Motor traffic flows swiftly, unhampered by road junctions, yet the ground is given back in a fair measure to the pedestrian. And since the structure of the city is so clearly outlined, its construction will be easy: it is based on the crossing of two axes, on two terraced embank-

ments or *terrepleins*, a platform, two arteries going in one direction and one in another. This last one can be built in two phases—first the central traffic lanes with a cloverleaf on each side, then the lateral traffic lanes which could continue their progress simultaneously with the normal development of the city. There would always be space for more buildings in the green belts adjacent to the radial arteries. The super-blocks would be merely levelled off and landscaped, each with its frame of green, planted from the very outset with grass and trees, but not given pavements or curbs of any kind. On the one hand, the use of highway technique; on the other, the technique of the landscaper, planting parks and gardens.

Brasília, capital of the aeroplane and the autostrada, city and park. The century-old dream of the Patriarch.

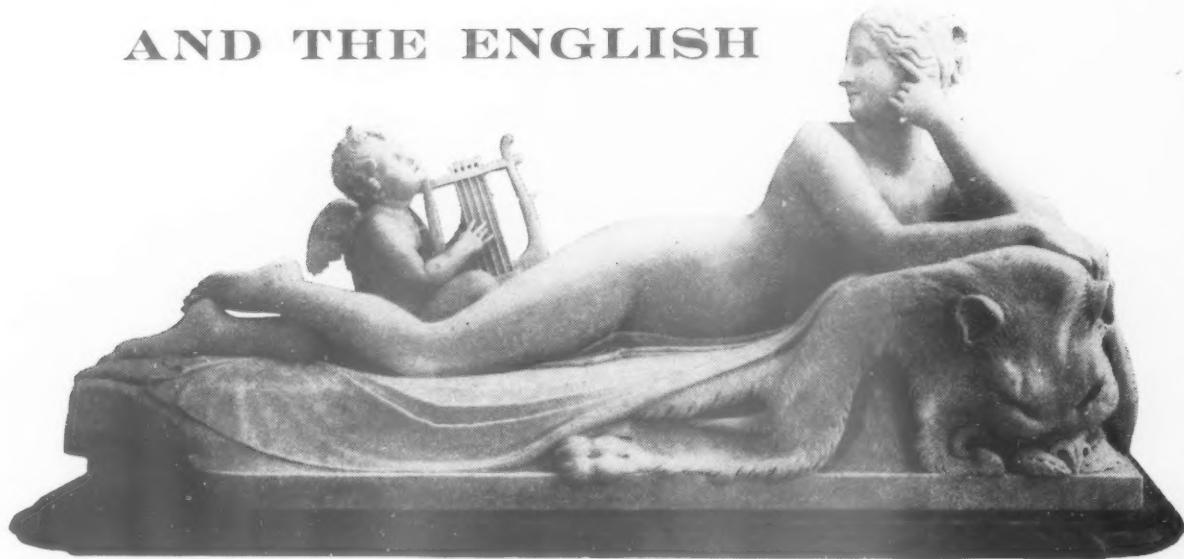
the end of the century. The number of civil servants per 1,000 of population, which has now reached a peak of 4.8, will probably decline. Nevertheless the statisticians estimate that the proportion living in the Federal Capital in 1980 will be near that of the USA—about 12 per cent of American officials live in Washington. This means approximately 45,000 officials in Brasília by 1980, each with an average of four dependants; always provided that the dwellings are ready for them.

Embassies, consulates, United Nations agency headquarters and the diplomatic Corps will be offered sites. The Federal Government, who own all the land, will build on some of it, lease some and, in order to increase initial capital, sell some under covenant to private enterprise housing co-operatives and approved development agencies.

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One of the Press comments after the award was to the effect that Lúcio Costa had spent 25 Cruzeiros to win a million. But with this expenditure—still only a tenth of what is needed in these days of inflation to buy a good French Impressionist painting—the Brazilian Government has made, in my opinion, one of the best investments in urban development that the twentieth century has produced.

## CANOVA AND THE ENGLISH



1. *Reclining Nymph*, commissioned by first Lord Cawdor, 1815.

*Antonio Canova was born late in 1757, and his work in sculpture is one of the chief glories of the Neo-Classical period in European art. On the occasion of his bicentenary, Francis Watson explores an almost unknown aspect of Canova's life—the constant respect and encouragement afforded to him by English patrons and friends, visitors and admirers—drawing on many hitherto untapped sources of Canoviana in contemporary memoirs and diaries.*

In spite of the important part played by English artists and English patrons in the early development of neo-classicism at Rome<sup>1</sup>, the English patronised the young Canova, the principal exponent of neo-classicism in sculpture, surprisingly little. This is the more curious in that Gavin Hamilton, a leading neo-classic painter and one of the principal English art-dealers and *ciceroni* in Rome, had been the first to befriend the young sculptor on his arrival from Venice in 1785 and exercised a critical influence on the development of his style. It is true that two distinguished collectors of classical sculpture, Sir Henry Blundell and Colonel Campbell (subsequently Lord Cawdor and long afterwards one of Canova's most enthusiastic patrons) together with an unidentified Irishman named La Touche gave minor commissions to the sculptor in these years, but thereafter the Napoleonic wars cut English travellers almost completely off from Rome and Italian art for nearly twenty years. Indeed, it is significant that Colonel Campbell's *Cupid and Psyche*, only completed in 1797, was acquired by Murat and never reached its intended owner.

<sup>1</sup> See: THE ARCHITECTURAL REVIEW, cxviii, No. 707 (Nov. 1955), pp. 285/9; Flaxman: the Bi-Centenary of an English Neo-Classical.

When in 1814 continental travel again became possible, the English flocked to Rome in great numbers. Canova was no longer the brilliant young sculptor whose studio a few enthusiastic English travellers like the Misses Berry had visited before the French Revolution. He had become a European figure, "the renovator of modern taste which had fallen into the most woeful corruption through the tortuous labours of Bernini and his wretched imitators", as one of the most popular English handbooks to the Rome of this period puts it<sup>2</sup>.

From this time onwards until his death, there is a great change in the situation, and Canova was literally showered with commissions from the English. Even before Waterloo his former patron, now Lord Cawdor, hastened to commission a *Hebe* as well as a figure of *Peace* and, in the following year, ordered a *Reclining Nymph*, a work which he eventually ceded to the Prince Regent and now at Buckingham Palace. The Regent, too, very conscious of his part and England's in the defeat of Napoleon, ordered a large group of *Mars and Venus*, an allegory of War and Peace, also at Buckingham Palace, as well as subventing the cost of the erection of the Stuart tomb in St. Peter's.

<sup>2</sup> *Rome in the 18th Century*. . . in a series of letters written in the years 1817 and 1818. Anon., (Mrs. C. A. Eaton), (1820), Vol. 3, p.293.

It would be wearisome to enumerate in detail all the works commissioned by Englishmen from Canova in these last eight years of his life, for the principal ones are recorded by all his early biographers. Mrs. Jameson, describing a visit to Canova's studio, writes: 'the most beautiful things I have seen in the various studios have been executed for English, German and Russian noblemen. The names I heard most frequently were those of the Dukes of Bedford and Devonshire, Prince Esterhazy and the King of England.' In addition, many English collectors acquired earlier works by Canova from the now impoverished Napoleonic aristocracy.

After 1814 Canova's studio became one of the principal places of pilgrimage in Rome for the travel-thirsty British. The memoirs and travel journals of the period contain numerous accounts of visits to the sculptor's *atelier* some of which are of considerable interest and all, without exception, entirely overlooked by Canova's biographers. Even earlier, during the short-lived Peace of Amiens, a few English, bolder than most of their countrymen who merely hurried to Paris to gape in awe at the splendours of the First Consul's *parvenu* court, had pushed on to Rome. One of these, Miss Catherine Wilmot, who was travelling with her friends, Lord and Lady Mount Cashel, confided to her *Journal* an account of a visit paid to Canova's studio in April 1803, which is entertainingly unsophisticated and gives some idea of Canova's immense prestige even at this date:

'One of the sights most beautiful to behold is the *atelier* (sic) of Canova. He is look'd upon by many, to surpass the ancient sculptors—and I am convinced if it was not for the prejudice in favour of the antique some of his productions would outshine any that was ever seen in the world before. The loves of Cupid and Psyche are delightfully represented: a Pugilist, a *Hebe*, the Bust of Bonaparte and amongst other things the King of Naples as a colossal (sic) figure of Mars, which is a good joke after he had fled from his country the moment he was attack'd. The exquisite perfection of everything he does surpasses belief . . . that by

which he expects to immortalize himself is his Hercules in the act of flinging a man into the sea. This is particularly opposed to the Farnese Hercules which is in a state of repose leaning on his knotted club. If you choose to see through my eyes you will prefer Canova's a thousand times beyond the other, for I cannot help thinking the Farnese Hercules one of the most lubberly propositions I ever saw in my life.'<sup>3</sup>

Of the numerous later descriptions of Canova's studio in Rome some of the most interesting are to be found in Lady Murray's *Journal*, the five rare and privately printed volumes of which are a mine of artistic information about Italy in the early nineteenth century.<sup>4</sup> With her husband, she paid a first visit to Canova's *atelier* on July 25, 1816. Amongst the numerous works which she describes as actually in progress are the *Nymph and Cupid*, now at Buckingham Palace ('Canova rejoiced in the peculiarly fine quality and purity of the marble'), and the *Three Graces* for the Duke of Bedford, now at Woburn Abbey. They actually watched him at work on a seated figure of a Muse (presumably the *Polyphemus*) and noted that he caressed the marble 'somewhat complacently just as he did later when showing them the statue of Pauline Borghese, with the remark, "Ce n'est pas du marbre, mais de la chair." The impression given is of somewhat Italianate boastfulness, but Lady Murray assures us that 'Canova was perfectly conscious of the merit of his performance, but totally unaffected and void of pretension,' a view of the artist's character supported by others of such differing characters as Tom Moore, Frances Lady Shelley, Mrs. Eaton and Stendhal.

The artist became exceedingly friendly with the two Murrays who visited him on many occasions both at his studio and in his home. Lady Murray describes a number of his

paintings which he showed with particular pride. This fondness for his own paintings was clearly a weakness of the sculptor's, for a few years later Tom Moore, on one of his many visits to Canova, notes in his

#### Journal:

'Called at Canova's and again looked over his treasures. It is strange enough (if the world did not abound in such anomalies) that Canova values himself more on the



2, detail of unfinished version of *Reclining Nymph*.

wretched daubs he has perpetrated in painting, than his finest sculptures.'

The description is rather less than fair to Canova's attractive if somewhat slight oil paintings, but no less so than Lady Murray's suggestion that he might have been as great a painter as a sculptor, had time permitted.

'It is one of the pleasures of Rome to lounge in the Studij of the best sculptors,' wrote Mrs. Jameson<sup>6</sup> at this period, and Canova's *atelier* was certainly one of those most frequented by her countrymen. When the gushing Lady Shelley visited the sculptor in December of the same year, 1816, she noted:

'He has just finished a group of Mars and Venus which is perfectly lovely. Perhaps the hands of the Venus are slightly an exaggeration of *poteri*, and the fingers taper too much. I ventured to ask him if he had seen any hands like that in Nature? He replied: "Yes, those of the Princess Borghese." He told me that his idea of the Mars and Venus came into his mind at Dover, while waiting for the packet boat.'

A few days later, on January 3, 1817, she paid a further visit to the studio 'and saw the preparations for the mould of the Mars and Venus, the model is now broken into little bits. Canova accompanied us to see the great horse he has made and which was intended for an equestrian statue of Napoleon. It is wonderfully fine. Canova wishes to put the figure of the Duke of Wellington upon it, and it is certainly worthy of him.'

This last comment may have been flattery on Canova's part or mere romanticism on Lady Shelley's for she liked to play the Egeria to the Duke's Numa.

Of all Canova's works in Rome the recumbent statue of Pauline Borghese was the one which most intrigued visitors. Its somewhat equivocal character and the fact that since his separation from his wife, Prince Borghese had kept the statue locked up in a room in the Borghese Palace, the key of which he was said always to carry on his person, only increased this interest. Few were privileged to see it, but one of the fortunate ones was Tom Moore. On November 9, 1819, he writes in his *Journal*:

'At half past five Chantrey and I went by appointment to Canova, to be taken by him to see his beautiful Venere Vincitrice (the Princess Borghese) at the Borghese Palace: a great favour to be permitted to see it. . . . I saw the statue by candlelight, Canova himself holding the light and pausing with a sort of fond lingering on all the exquisite beauties of this most perfect figure.'

To the chorus of praise of Canova which rose from the lips of English visitors to Rome, there is only one dissentient voice, that of Henry Mathews, who noted in his diary when he paid his third visit to the studio just six days after Lady Shelley had been there:

<sup>6</sup> *Memoirs, Journal and Correspondence of Thomas Moore*, ed. the Rt. Hon. Lord John Russell, M.P. (1853), Vol. III, p. 71. The entry is dated Nov. 13, 1819. Moore's *Journal* abounds with descriptions of Canova's studio, his character, etc., for together with Sir Thomas Lawrence, R.A., Jackson, the portrait painter, and the sculptor, Chantrey, he seems to have spent a great deal of time in the sculptor's company.

<sup>7</sup> *Diary of an Ennyée*, by Mrs. A. Jameson (1826), p. 199. In this, her first published book, it is interesting to find the future popularizer of the Italian primitives extolling over neo-classic art.

<sup>8</sup> *The Diary of Frances, Lady Shelley*, 1787-1817, ed. R. Edgecombe (1912), Vol. I, p. 350.

<sup>9</sup> Shelley, loc. cit., p. 360.

<sup>10</sup> Moore, loc. cit., p. 68.

'Went for the third time to Canova's Studio. He has perhaps attained a reputation beyond his merits . . . (there is) a finical fashionable air about his female figures and his men are all attitudinarians. He is too fond of borrowing from the ancients.'<sup>10</sup> But Mathews describes his diary as *The Journal of a Tour in Pursuit of Health*, so his may have been a jaundiced temperament.

When the Murrays next visited Rome five years later, in 1821, Canova was still putting the last touches to the *Mars and Venus* which Lady Shelley had found 'finished' four years earlier. In addition, a *Venus* for Thomas Hope was 'almost finished' and the artist had just begun a *Magdalen* for Lord Liverpool.<sup>11</sup> Lady Murray goes on to add:

'Canova had begun a reclining nymph for Lord Darnley, but spots having appeared on the marble, he left it unfinished and tried another block where, after the figure was much advanced, the same circumstance occurred. Canova wrote to mention this to Lord Darnley, who returned for answer, he left the matter entirely to Canova, and should be satisfied with whatever he sent; on which Canova wrote to a gentleman for whom he was doing a beautiful dancing nymph, and asked him to give it up to Lord Darnley, accompanying his letter with a bust of which he begged the gentleman's acceptance. Canova was giving the finishing strokes to the nymphs when we called.'

The exchange was evidently never effected, for the statue is presumably the piece described by Cicoguara as '*Najade giacente ma senza l'Amorino, repezione di quella posseduta da sua maestà Britannica*',<sup>12</sup> commissioned by Lord Darnley and recently acquired by Messrs. Wildenstein from the Darnley collection at Cobham Hall.

In spite of the personal care that Canova was clearly taking to please Lord Darnley, this piece of sculpture was still in Canova's studio at his death a little more than a year after the Murrays' visit and is described by Cicoguara as '*poco meno che finito*'; the defects in the marble noted by Lady Murray are still quite apparent.

On the same visit in April 1821, Lady Murray noted: 'the model of Endymion with his dog sleeping by his side' (which she describes as 'most beautiful') was now completed.<sup>13</sup> This must have been the full size plaster model, for she adds that Canova 'had not yet touched the marble' commissioned by the Duke of Devonshire although he had only eighteen months more to live. The completed work arrived in London shortly before July 18, 1823, when Henry Fox saw it during a ball at Devonshire House at which 'the newly arrived statue of Endymion was exhibited much to the real or

<sup>10</sup> *The Diary of an Invalid . . . in the years 1817, 18 and 19*, (1820), p. 126. The passage is dated January 9, 1817.

<sup>11</sup> It was *à propos* of this commission that the Duchess of Devonshire wrote to Sir Thomas Lawrence: 'Canova must not do too holly a figure for Lord Liverpool, who is a great admirer of female beauty and would like a Nymph or a Venus better than a Magdalen.' (MS. letter belonging to Royal Academy.)

<sup>12</sup> *Della Vita di Antonio Canova* libri quattro compilati da Melchior Misserini (Prato, 1824), p. 513.

<sup>13</sup> If this implies that it was only recently completed, Canova must have worked on it for a considerable period, for on August 15, 1819, the Duchess of Devonshire wrote to her step-son: 'Canova came last night—he had worked with such ardour that he was quite exhausted, but he won't yet tell me what he is modelling for you.'



3. allegorical representation of War and Peace, commissioned by the Prince Regent 1815.

affected horror of some ladies.'<sup>14</sup> Their reaction to the nude male figure was not typical, for a short while before, the same diarist tells us:

'(Canning) talked of Canova and Chantrey and praised both amazingly. Said he would rather possess Canova's *Magdalen*, *Endymion* and some other I forget, than all the works of art he ever knew.'<sup>15</sup>

Fox concludes the earlier account of the *Endymion* with

'It was Canova's last work and he expressed satisfaction that it was finished for he justly esteemed it one of his best works.'

Support for this claim that it was in fact completed by the artist himself comes from its original possessor, the sixth Duke of Devonshire, for in describing his Sculpture Gallery in the exceedingly rare *Handbook of Chatsworth and Hardwick*, he wrote:

'If evidence were wanting of its having been finished by Canova, I have plenty of letters in my possession that establish that point; but none can be required when you contemplate the admirable perfection of the work. The quality of the marble

<sup>14</sup> *The Journal of the Hon. Henry Edward Fox*, ed. Lord Ilchester (1923), p. 172.

<sup>15</sup> Fox, loc. cit., pp. 53-54. This, in fact, was what Canova himself told the Duke's step-mother. (Chatsworth MSS.)

is so fine, so hard, so crystalline, that Canova would not change it on account of the stain in the arm; that on the cheek he liked, and thought it represented the sunburnt hunter's hue. He had often enquired of me what subject I preferred, and which of his works, and I told him always the sleeping Genius of the Archduchess Christine's tomb at Vienna, and also the Genius on Rezzonico's monument. He, accordingly promised me something that I should like still better. I had already attached myself to him very much; and it was with mingled feelings of grief and exultation, of boundless admiration and recent bereavement, that I first saw my group in the well-known studio, where I had passed so many happy hours with the most talented, the most simple, and most noble-minded of mankind.'

'What anxiety for its voyage to England! A cast of it, sent from Leghorn to Havre, was lost at sea; it was to have been copied in bronze at Paris. In other respects, good fortune has attended all my cargoes. . . .'<sup>16</sup>

<sup>16</sup> *Handbook of Chatsworth and Hardwick* by William, 6th Duke of Devonshire, privately printed (1845), pp. 104-5. The *Handbook* is in the form of a series of letters addressed to 'Dearest Harriet,' his sister, Lady Granville.

The Duke was, perhaps, the most fervent of all English collectors of Canova's works. He writes, indeed, 'I was famished at that time (i.e. 1819) for his works,' and more of Canova's sculpture remains at Chatsworth than anywhere else in this country. No doubt his step-mother, the Duchess Elizabeth, influenced him in this direction, for she was very friendly with the sculptor during the years she spent archaeologizing in Rome. The Duke indeed admits as much when writing of another marble by Canova at Chatsworth:

'Canova's bust of Madonna Laura was dearly loved by the sculptor, entirely formed by his own chisel; and it required all the Duchess of Devonshire's powers of persuasion, added to my entreaties, to make him part with her.'<sup>17</sup>

The most esteemed of the Canovas at Chatsworth is, of course, the life-size seated figure of Laetitia Bonaparte, Napoleon's mother, of which the Duke wrote:

'Madame Mère! first acquired treasure, next to Endymion the most valued! Renouard, a French bookseller, negotiated the purchase for me at Paris in 1818. Canova made no repetition of it; but, after his death, Jerome, Prince de Montfort, got Trentanove to copy the original cast in marble, and that or another copy I saw in the Palazzo Bucchi in Bologna. But Canova was truth, and he told me there was no other by him. The old lady herself used to receive me at Rome, and rather complained of my possessing her statue, though my belief is that it was sold for her advantage. Canova made it at Paris, and it was exhibited in the Louvre. Lord Holland found the single word that expresses so much on the pedestal—one Greek word from the Iliad, that says, "Unfortunate mother of the greatest of men" "ΔΥΣΑΚΙΣΤΟΚΕΙΑ".'<sup>18</sup>

<sup>17</sup> Handbook, loc. cit., p. 102.

<sup>18</sup> Handbook, loc. cit., p. 94-95.

In addition, a most interesting relic of the artist is still to be found at Chatsworth. When writing of the over-life size bust of Napoleon given him by the Marchioness of Abercorn and now in the sculpture gallery there, the Duke adds:

'And now you must look under the bracket of your left hand for Canova's tools—another interesting relic procured by that warm-hearted friend of the great sculptor—and certainly the last he employed. Her sister, Lady Julia Lockwood, gave them to me. Lady Abercorn had the strongest of feelings, and could not disguise them, or her grief at her friend's death; so that in Rome, that city of fountains, she was called from her ready tears the *Acqua Infelice*.'<sup>19</sup>

The Duke claimed that the bust of Napoleon was kept by Canova in his bedroom till his dying day: 'I know of no other authentic bust of Napoleon by Canova; and I believe that none exists, though everybody calls their own so.'

This remark, like certain of the other passages already quoted, raises the interesting question as to just how much of the later works attributed to Canova in England, especially those many repetitions of his best-known sculptures and the numerous ideal busts, herms, etc., are really the work of his own hand. In fact, the Duke of Devonshire actually names three of the studio copyists responsible for other 'Canova's' in the Chatsworth Sculpture Gallery: Benaglia, Trentanove and Rinaldi. Lady Murray saw so large a number of unfinished works, mostly of large size, in the studio only eighteen months before Canova's death, that it is impossible to believe he completed them all himself. Indeed, in certain instances Cicoguara's lists assure us that he did not. The case of Lord Lansdowne's *Sleeping Nymph*, now in the Victoria and Albert Museum, is fairly well known.

<sup>19</sup> Handbook, loc. cit., p. 93.

After the sculptor's death, his brother, the Abbé Canova, assured Lord Lansdowne that it 'attendait seulement d'être travaillé par le créateur du modèle,' thus implying that Canova had not worked on the marble at all, though J. N. Fazakerley, M.P., a friend of the owner, was assured by one of the studio assistants that the whole space between the shoulders and half-way down the body 'was exclusively the work of his late master'.<sup>20</sup> To reach finality in such matters is generally impossible for, as Fazakerley himself remarked, 'the glorious uncertainty of Italian evidence makes the attempt hopeless.' For this very reason accounts of the sculptor's methods are particularly interesting, although these were probably common enough in his own day as they certainly were during the latter part of the nineteenth century, and to some extent still are. During her stay in Rome, in 1718-1719, Mrs. Eaton, like so many English visitors, seems to have spent a considerable time in Canova's studio. She gives a very careful description of his methods of work for, she says, she found that many of her countrymen 'had previously supposed that his custom was to fall upon a block of marble and chisel away till he made it into a statue.' In fact, she goes on:

'... he forms his model in clay, and this is entirely the work of his own hands; but before he begins, the statue is perfectly *ideato*—the visionary figure is before him.'

'When finished, a cast is taken from it by his assistants which is dotted over with black points at regular intervals, to guide the workmen. From this model they begin to work, and having reduced the block of marble into form, and made it a rough hewn statue, the sculptor himself resumes his labours. The exterior surface, as it were, is his to form and perfect, and the last finishing touches he generally gives by candle-light. It is afterwards polished with pumice-stone.'<sup>21</sup>

This account of the artist's use of the procedure known as 'pointing' agrees in almost every particular with that given by Stendhal in his *Journal* under the date October/November 1811, though the Frenchman suggests that the artist's work on the marble even at that date was absolutely minimal, concluding his account with 'viola son seul travail sur le marbre. Il se réduit à quelques coups de lime'.<sup>22</sup>

Canova's particular affection for the English was partly due to his appreciation of the part played by them—and especially by the Duke

of Wellington—in assisting him to obtain restitution of the art treasures looted from Rome by Napoleon. There are numerous references to the subject in contemporary English memoirs, but it is perhaps worth quoting just one particularly vivid account of the difficulties he encountered during his mission from the Pope. On October 14, 1815, Samuel Rogers wrote from Paris to his sister Sarah:

'I saw Canova out in the open street with the "Transfiguration" and the "St. Jerome" of Domenichino and two other Raphaels, half supported in the dirt, and at a loss how to marshal the Austrian soldiers who were to transport them on their heads, uncovered, to the barracks; where I have been two or three times and which is a terrible scene of confusion. The horses (i.e. from St. Marks, Venice) went by our windows (at the Hotel Meurice) one by one, in as many carts uncovered like dead horses, and the people stood at the doors to see them pass.'<sup>23</sup>

In the latter part of Canova's life his position as the leading European artist was undisputed. He was probably the last artist whose claim to occupy this pre-eminent position was hardly questioned by any man of taste regardless of nationality or age. His contemporaries saw him as the true descendant and worthy continuator of the great classical artists—indeed as their rival. Chantrey (who thought Michelangelo's *Moses* 'vulgar and extravagant in many respects') told Tom Moore that 'if, by any trick the *Creugas* of Canova could be buried and dug up again in fragments as an ancient statue, it would produce a great sensation,'<sup>24</sup> and this sets the tone of contemporary critical comments on Canova.

Lord Broughton was not a highly emotional man nor one particularly interested in the arts, and for that reason his description of how, whilst in Rome, he heard of Canova's death at Possagno, is the more telling. Only the day before he had been assured, on enquiry at the studio, that the absent sculptor was in the best of health. 'The news of Canova's death,' he wrote, 'was told to us on the day I am writing this, October 21st. We felt extremely affected. For my part, though knowing him but a very little, I could not help feeling as if something that attached me to existence had dropped away for ever. I had been so accustomed to think of Canova and Italy as making part, as it were, of each other. The loss of such a man seemed to take away the interest of the country and the age in which he had lived.'<sup>25</sup>

<sup>20</sup> The documents are printed in the sale catalogue of the Lansdowne Marbles (Christie's, March 5, 1930), pp. 73-75. Fazakerley's statement seems to agree with Cicoguara's listing as printed by Misserini.

<sup>21</sup> Mrs. Eaton, loc. cit., Vol. 3, p. 299.

<sup>22</sup> Stendhal: *Oeuvres Intimes* (Bibliothèque de la Platiade, 1955), p. 1180.

<sup>23</sup> Rogers and His Contemporaries by P. W. Clayden (1889), Vol. I, p. 205.

<sup>24</sup> Moore, loc. cit., p. 54.

<sup>25</sup> Recollections of a Long Life, by John Cam Hobhouse, Lord Broughton, ed. Lady Dorchester, Vol. III, pp. 8-9.



4. Laetitia Bonaparte, mother of Napoleon, acquired by the Duke of Devonshire, 1819.



1, the end of the main motor lab. block; the greasing building is behind the wall in the right.

## RESEARCH CENTRE AT THORNTON-LE-MOORS, CHESHIRE

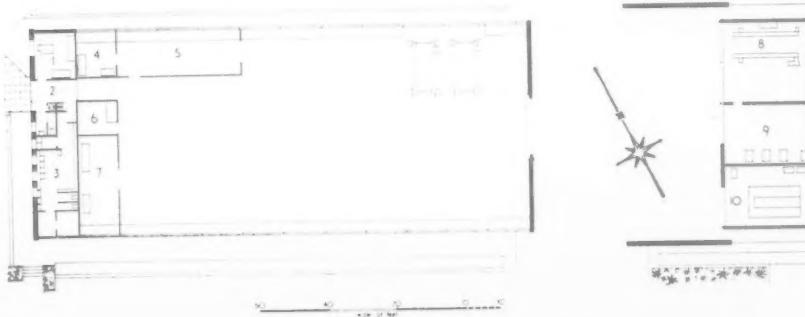
ARCHITECT, FREDERICK GIBBERD, PARTNER-IN-CHARGE, R. J. DOUBLE  
ASSOCIATE ARCHITECT, J. W. GRIMES, ASSISTANT ARCHITECT, DALE SMITH

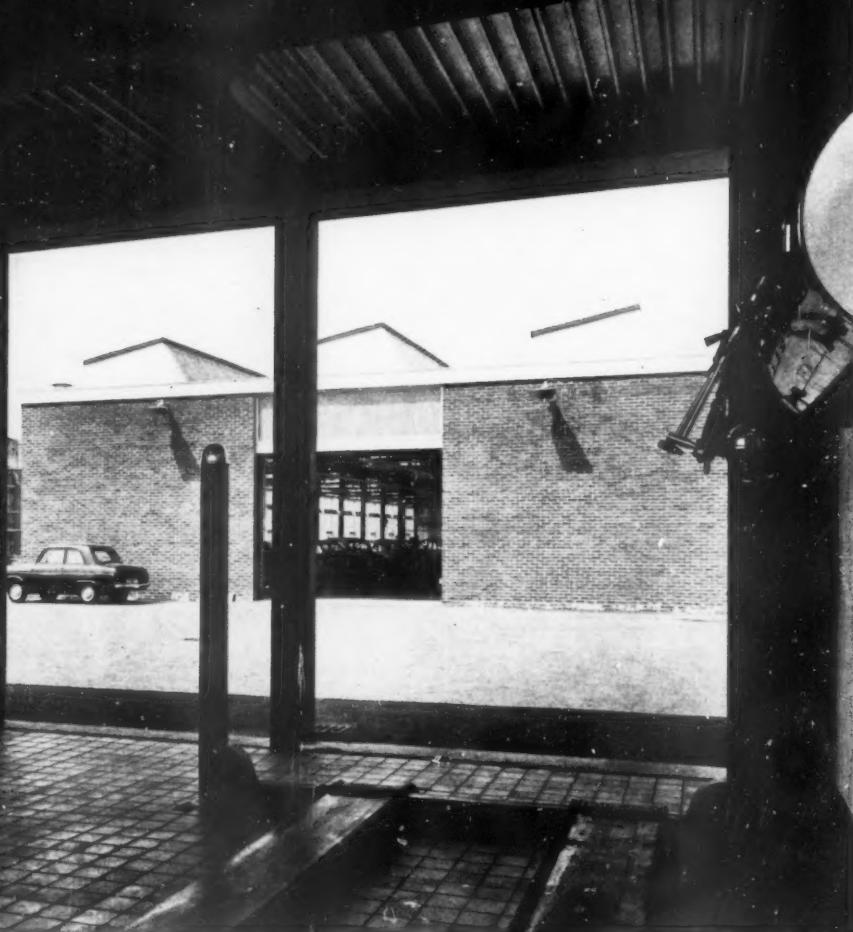
This is a road test laboratory for Shell Research and carries out research work connected with the testing of motor fuels and lubricants, including preparation, maintenance, servicing and dismantling of test vehicles. It is the first of a series of extensions to the Thornton Research Centre, all to be designed to a 12-foot structural grid, with a standard truss depth of 5 feet, which will permit spans of up to 60 feet. There are two units, the main motor laboratory block and a car washing and greasing building, linked to it by an open court and screen walls. The laboratory has a mezzanine floor at one end housing offices and stores; the remainder is an open area providing the main vehicle standing and working spaces, with subsidiary rooms in which motor components can be

dismantled, cleaned, inspected and measured. The light steel frame has welded steel trusses with rod bracing; the RSJ columns are supported on pier foundations carried down approximately 4 feet 6 inches on to rock shale. The aluminium roof deck is covered with three-ply roof felt finished with a white spar dressing. End walls are cavity construction with dark blue handmade facing bricks; the side walls are clad with patent glazing on a 3-foot module. The centre panes are  $\frac{1}{4}$  inch wired roughcast glass with top panels of white diffusing plyglas; the bottom panels have blue vitreous enamelled steel sheet with an inner lining of  $4\frac{1}{2}$ -inch brick. The main laboratory floor has a hardened granolithic finish, generally laid *in situ* but with precast tiles in the engine-stripping bay, because

of oil spillage. Fluorescent light fittings have been used in the main areas of the laboratory; a grid of box trunking has been fixed directly to the bottom chord of the roof truss and light fittings have been suspended directly from this grid. Low pressure steam is used for heating this building; a continuous pipe coil is run round the perimeter of the main laboratory at low level and unit heaters have been hung under the monitor roof lights.

key.  
1, supervisor.  
2, lobby.  
3, cloakroom and lavatory.  
4, solvent wash.  
5, engine stripping.  
6, office.  
7, machines.  
8, greasing bay.  
9, lubricant bay.  
10, car wash bay.





Research Centre at  
Thornton-le-Moors, Cheshire

2. the greasing bay in  
the subsidiary block  
looking towards  
the main laboratory.

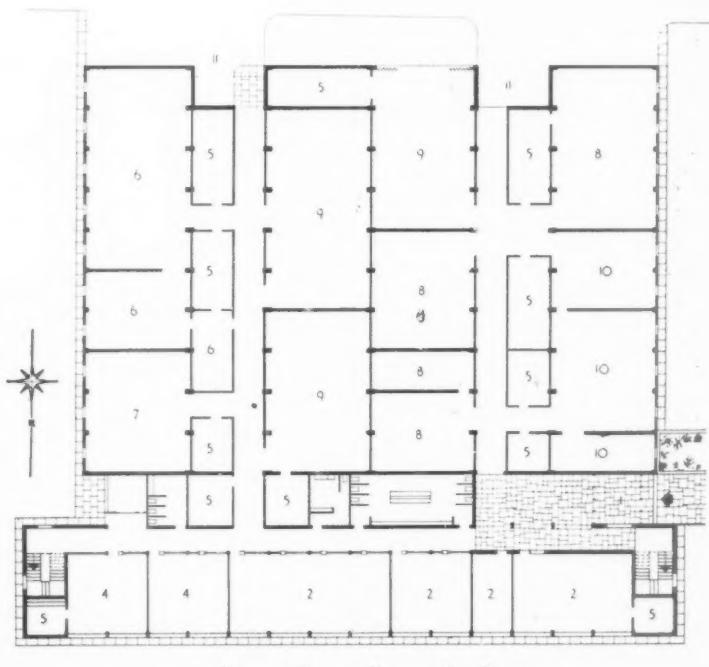
### TECHNICAL COLLEGE AT STOURBRIDGE, WORCS.

ARCHITECT, FREDERICK GIBBERD

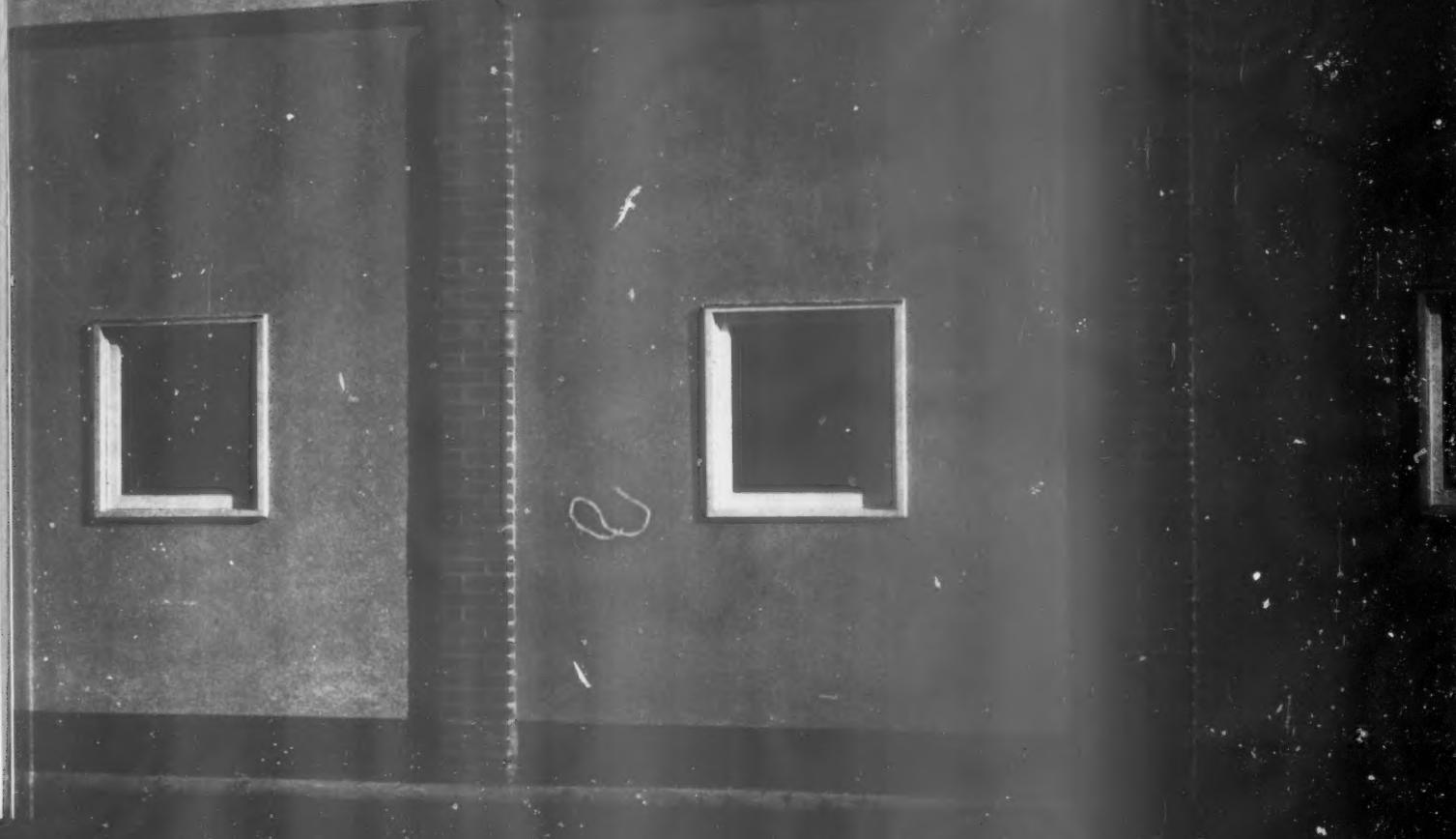
ASSOCIATE ARCHITECT, J. B. FORREST

The site for the College is on Hagley Road which slopes up steeply out of the town towards the south-east. The aim was to cover as little of the site as possible, and to keep the view from the main road to the seventeenth-century Old Swinford Hospital School. The principal subjects taught are glass and pottery manufacture, for which there are design studios, workshops and furnace rooms. There are four main units; a single-storey workshop block with a three-storey laboratory and drawing office block in one unit, a dining and recreation block, a T-shaped tower of general classrooms and studios, and a large assembly hall. All these units are linked by a continuous spine corridor stepped to follow the ground slope. The workshops, laboratories and drawing offices have been sited on the small flat plateau on the west side of the site and form the first stage, illustrated here. The workshop block is single storey, with three banks of workshops separated by stores and access corridors which connect at one end to the service road for delivery of materials, and at the other to the three-storey laboratory block. All the specialist rooms, except sculpture, are in this block and the plan allows flexibility of room arrangement on each floor. The three-storey block has a r.c. frame with columns on each side of the teaching rooms. Floors and roof are patent pre-stressed plank and hollow pot construction. End walls of this block are in facing bricks with breeze block inner skin; side walls are prefabricated panels of glazing with a glazed infilling to cill height. The workshop block structure is load-bearing brick piers carrying pre-stressed, pre-cast concrete valley gutters, on which are pressed metal frames which span the bay width of 11 feet and form patent glazed monitor lights roofed by wood wool slabs.

3. top left the three-storey labs. and  
drawing offices from the east with  
Old Swinford School in the background. 4, top  
right, the join of labs. and workshops with  
main entrance between. 5, below, detail of the  
workshop elevation and monitor rooflights.



ground floor. key. 1. main entrance. 2. administration. 3. labs. 4. classrooms. 5. stores. 6. mechanical engineering. 7. electrical engineering. 8. glass. 9. building. 10. pottery. 11. service entrance.





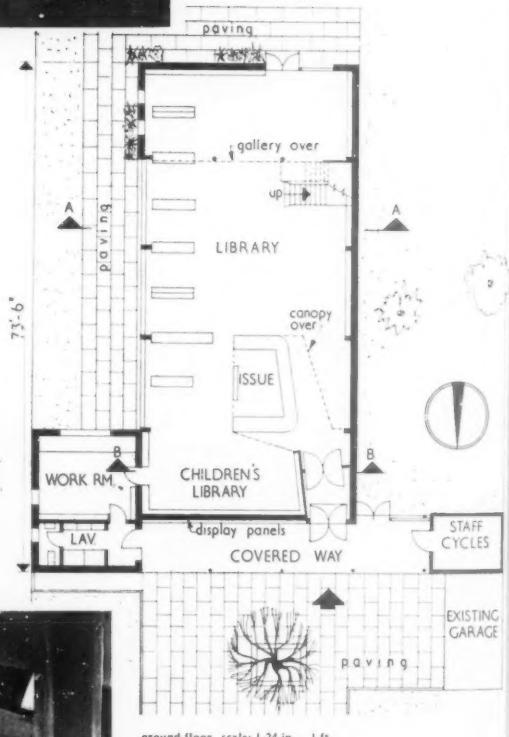
## BRANCH LIBRARY AT BEACONSFIELD, BUCKS

COUNTY ARCHITECT: F. B. POOLEY  
 ASSISTANT ARCHITECTS: STEPHEN GEORGE, DAVID EALES  
 and AMBROSE HUMPSTON

This branch library is in Reynolds Road near the town's shopping centre. It is in part of a mature garden, and has been set back from the road frontage to preserve existing trees, and to provide a paved forecourt. The building has load-bearing brick external walls, timber windows and a low-pitched roof of 3 in by 2 in. joists which is finished with copper sheeting carried on prefabricated timber portal frames spanning 30 ft., chosen for economy and quick erection—four arches were put up in five hours. The south wall has an outer skin of horizontal cedar boarding; the spandrels between the windows on the east side are West African mahogany. Double glazing up to door height level has been used for the windows on the east side to reduce heat losses. The inside is designed to be controlled by one assistant at the issue desk if necessary. The canopy above the issue desk has been formed by the projection into the library of the ceiling of the draught lobby at the main entrance. It is timber framed and suspended from the roof purlins by tension wires. The portal frames are painted dark grey with white edges, and the walls light grey.



6, the north front,  
 showing verandah and  
 display panels to the left  
 of the main entrance.



7, the interior from under the  
 gallery which houses the  
 librarian's office. At the far  
 end is the issue desk with  
 canopy over suspended from  
 the roof purlins by tension wires.

The name *miscellany* implies, of course, an architectural *miscellany*—one that will include subjects which, though marginal to architecture, are nevertheless vital to it.

## Miscellany

### BOOKS

#### GOTHIC MYTH AND MATHS.

THE GOTHIC CATHEDRAL. THE ORIGINS OF GOTHIC ARCHITECTURE AND THE MEDIEVAL CONCEPT OF ORDER. By Otto von Simson. London, Routledge & Kegan Paul, 1956.

This new volume on the creation of Gothic architecture is not a handbook of medieval archaeology. The reader must not expect to find there a detailed discussion of the Norman, Burgundian or other sources of Gothic, or a continuous story of the experiments which took place in the Ile-de-France in the course of the twelfth century. Professor Otto von Simson has concentrated his attention on the two buildings which, in his view, represent the most intense creative moments in the formation of the new world of forms: the Saint-Denis of Suger, and the Chartres of 1194. His aim has been to make us understand why and how the new architecture was invented. He decided that this could be achieved only by treating history not in length, but in depth, and in so doing he has given us a beautiful and most illuminating essay on the nature and meaning of Gothic.

The beauty of the book lies perhaps mostly in the vision it gives of the richness and unity of historical life. Professor von Simson has brought together around its main theme an enormous amount of precise and up-to-date information covering nearly every aspect of human activity in the times of Louis VI and Louis VII of France, but mostly connected with movements of ideas; and all the forces at work recover their intense vitality and their onward thrust. At no moment does the author allow the movement of history to be reversed by some anticipation of what was to happen later and at each stage the act of artistic creation takes up all its weight and significance from being placed again at the apex of historical urgency.

All great works of art are supported by some mythical impulse, and Professor von Simson analyzes with great insight all the elements at work in the myth of Saint-Denis. The fusion into one of the three Denises—the Areopagite, the bishop of Paris and the Syrian visionary—was of course one of the essential elements in the ideological construction which found its expression in the new abbey church and its stylistic inventions. But here Suger the statesman, Suger the creator of a new political ideology, appears no less important than Suger the maker of symbols and allegories. Behind Suger's urge for a complete transfiguration of all the means of art, we now find

a background of intentions which may appear even richer and more revealing than the one reconstituted by Professor Panofsky in his introduction to Suger's writings—and this is no mean merit on the part of the author. The same method is followed in the analysis of Chartres. There again we find the stimulus of a myth of long standing, which suddenly takes up a new significance in a momentary convergence of opportunities.

This notion of myth is an essential element of historical explanation: it acts as the connecting link between the various levels of thought in the minds of both patrons and artists. But it is not given the first place in Professor von Simson's study: actually the first 58 pages of his book are devoted to the *Medieval concept of order*, and behind the cosmologies and the theological constructions of the time the author discovers the basic aesthetic principles which made the Gothic vision possible. Gothic was conditioned by the Platonic revival of the School of Chartres, by the concept of geometrical harmony as the inner law of divine thought, to which every superior achievement of man should conform. Of no less importance were the metaphysics of light, which had found their most striking expression in the writings of the Pseudo-Areopagite and were translated by Suger and his team into the aesthetics of light. These two major trends of philosophical speculation explain, in Professor von Simson's view, the two most original aspects of Gothic: the use of light and the new precision in architectural designing.

The principle of light is well known and on this point there was probably little to be added to the remarks of other scholars. The principle of harmony is more interesting in its formulation, since it is made to cover at the same time the relation between structure and appearance, the obvious geometrical nature of Gothic and the calculation of proportions. No doubt these various aspects all reflect one and the same nexus of reasoning. But the matter is on the whole treated on a somewhat general plane and one would like to ask a few more questions. First of all, it might have been useful to distinguish between the different types of architectural geometry. We know that Suger wanted his church to rival Hagia Sophia in splendour. Now at Hagia Sophia also the building expresses a purely geometrical harmony, but the geometry we find there is conceived in terms of large volumes, it is to a considerable extent a geometry of the sphere, based on curved surfaces enclosing a centralized space. Gothic visualizes a completely different geometry, in the form of a linear network, of a closely articulated framework. This linear articulation of architecture

begins at an early date in the West, about 1000 at the latest, and it reflects the advent of this new vision of geometry, in which the volumes are not defined by surfaces, but by mere lines. Is not that linear definition of forms in some way connected with the formal dissection of all systems of thought into dry statements and formulas submitted to a syllogistic framework? Panofsky's idea of a profound analogy of mental structure between Gothic architecture and the methods of Scholasticism cannot be too easily dismissed. At any rate the term *Geometry* has to be more precisely defined. In the same way, could we not have been reminded that submission to a strict geometrical order was already one of the basic laws of Romanesque sculpture? What the Portail-Royal shows is a change of geometry, the simpler framework of architectural lines being substituted for the autonomous network to which Romanesque sculpture had had to conform.

A more serious weakness in Professor von Simson's book is that it fails to demonstrate what geometrical formulas were actually used by Gothic builders. Chartres is the only building for which we are given a tentative system of explanation, but even in this case the reader is left with some doubts: the neck of a capital is not a convincing landmark in the design of an elevation; the level of the abacus is certainly what must be accounted for, and as long as one significant measurement is left out of a proposed reconstruction, the whole formula must be suspect. As for the appendix on the south-west tower of Chartres, it is difficult to see what relation it bears to the work it is meant to explain. More rigorous methods are obviously required in this dangerous field of investigation. But Professor von Simson is surely right in his belief that every line and measurement in a Gothic building was the result of exact calculations derived from some mathematical law of harmony. We may in fact be on the eve of getting at last a better understanding of how this was worked out: a young English scholar, Doctor Peter Kidson, has recently proposed a new approach to the problem, based essentially on the principles used in Roman and post-Roman metrology, and we must hope that he will be able to publish soon the results of his research, as this might put us, for the first time, on firm ground.

Professor von Simson tends to exaggerate considerably the similarity between Cistercian and Gothic principles. The Cistercians actually took no part at all in the elaboration of Gothic architecture and it is only after 1150 that they adopted and started spreading across Europe a simplified version of the new style. Before that, Cistercian architecture was deliberately

archaic, its aim being a primitive simplicity, even if it accepted some 'modern' features such as the pointed arch. But the influence of the Cistercian ideal was not restricted to the churches of the Order, and on this point Professor von Simson has a very tempting suggestion to make: might not Sens cathedral reflect Saint-Bernard's idea of what a cathedral should be, powerful and modern in its design, without becoming ostentatious? This is by no means impossible. But if it was so, the stylistic gap between Cistercian and Gothic architecture would only become more obvious, and almost measurable. Sens cannot in any way be detached from the group of Saint-Denis; it shares with it the same connections with Normandy. The triforium at Sens is definitely not Burgundian: it repeats a formula first used at the Mont-Saint-Michel and soon after at St. Alban's; the sexpartite vault comes from Caen; and the oblique plantation of the rib shafts—which, by the way, is the rule in the Ile-de-France from the 1120's—is a characteristic feature of all the earliest rib-vaulted buildings of Normandy as distinct from England, with the only notable exception of Lessay. The vault of the apse is also derived from a Norman prototype: the chapter-house of Jumièges, a much more important building than the conservative Saint-Georges de Boscherville. In fact the nave of Sens seems to combine in its treatment the two successive architectures of Saint-Denis: the major piers, with their enormous projection, recall the huge piers of the narthex of Saint-Denis, while the thin shafts over the twin columns, and, indeed, the whole upper part of the elevation, conform to the linear style of Suger's choir.

Jean Bony

## TECHNOLOGY ENHANCED

TOMORROW'S LANDSCAPE. By *Sylvia Crowe*. Architectural Press, London, 21s.

This is the second book on the art and science of landscape architecture to be written by professional and practising landscape architects in this country since the war. It deserves a wide sale among laymen and it is a particularly valuable addition to the working library of professionals concerned with the use of land.

It is a companion book to Brenda Colvin's *Land and Landscape* and it in no way detracts from its originality to say that it could not have been fully appreciated without its predecessor. These two volumes are attempts to establish a theory and a methodology which has, and will increasingly have, an influence on future practice. It was Brenda Colvin's contribution to landscape theory that she introduced the biological attitude to the problems of landscape design, and it is Sylvia Crowe who has evolved methods by which it can be usefully applied. Both writers see Nature as a process rather than a norm, in distinction to the nineteenth century idea, which continues to this day, of Nature as virgin and inviolable. And since flux and change and the process of evolution are the essential facts which are considered to be true in all nature, then the work of the designer resolves itself into finding, not arbitrary and fixed solutions but methods of control and

guidance. So in the work of these two writers the systematic study of plant communities or plant ecology is a dominating principle.

From no other viewpoint could Sylvia Crowe have evolved her classification of scenery in relation to its ability or failure to resist human contact and use and to formulate her theory of wear. Her book is concerned with applying this theory to the immediate problems of land use, the reclamation of industrial waste land, the complex questions raised in the designated areas of the National Parks and in combating the blight of subtopia in all its forms.

This theory of density and its relation to scenery is one which ought to be studied closely by planning officers in national park areas who are concerned with, or who are empowered to make themselves responsible for, the preservation of scenic beauty. The chapter in this book dealing with Open Country would be of use in helping them to find a balance between what appear to be incompatible ideals, the conservation of wild scenery, the provision of facilities for its enjoyment by holiday makers and its use, in the public interest, for mining, water supply, reafforestation or the needs of the Services. On the subject of forestry Sylvia Crowe's opinions are more balanced than some which have sometimes appeared in the pages of this journal in as much as she takes into account the multiple uses of timber and timber trees and its wider biological aspects. The author's views on the landscape of towns, and of new towns in particular, contain a sensible analysis of basic needs. What might have been emphasized is the importance of sensitive site planning, grading and detailing generally since these factors form a structure more productive of amenity than anything else. Failure in site planning cannot be rectified or corrected by planting alone. It says much too for her evenness of temper that as a New Town landscape consultant she can write about open space in present day local authority housing without indignation. In no other century has its function been so misunderstood.

H. F. Clark

## ST. PAUL'S OLD AND NEW

A HISTORY OF ST. PAUL'S CATHEDRAL. Edited by the Very Rev. W. R. Matthews. Phoenix House, 50s.

This is a notable book, containing chapters by six recognized authorities, covering all aspects of the history of St. Paul's; one, indeed, which will become indispensable to any future scholar. For though the evolution of Wren's building is by now familiar enough, this book differs from all others in its very full treatment of the earlier centuries, and also of the changes since Wren's day, including an account of the war damage and its repair. Much of the information is not architectural, but all is of interest and importance for a complete understanding of the history of the building. The chapter on the history of the fabric—a good account, marred by one unfortunate slip stating that the walls of the choir and transepts were completed in 1675—is fittingly written by Mr. Martin Briggs, that pioneer writer on Baroque architecture, who

dared to say as long ago as 1913 that Wren's architecture had Baroque characteristics (a view which was then almost heretical) and so was a just expression of its age. The plates are adequate and there is an excellent bibliography with full references to primary sources.

M.D.W.

## Books Received

AN INTRODUCTION TO FLORENTINE SCULPTURE IN THE 15TH CENTURY. By J. M. Bulla. Rockliff. 25s.

CITIES IN FLOOD. By Peter Self. Faber & Faber. 21s.

RECORD HOUSES OF 1957. Architectural Record, USA.

INDEX OF AMERICAN ARCHITECTURAL DRAWINGS, 1900. American Association of Architectural Biographers, Charlottesville, 1957.

QUIET PLACES. By Basil Collier. 25s.

## FUNCTIONAL TRADITION

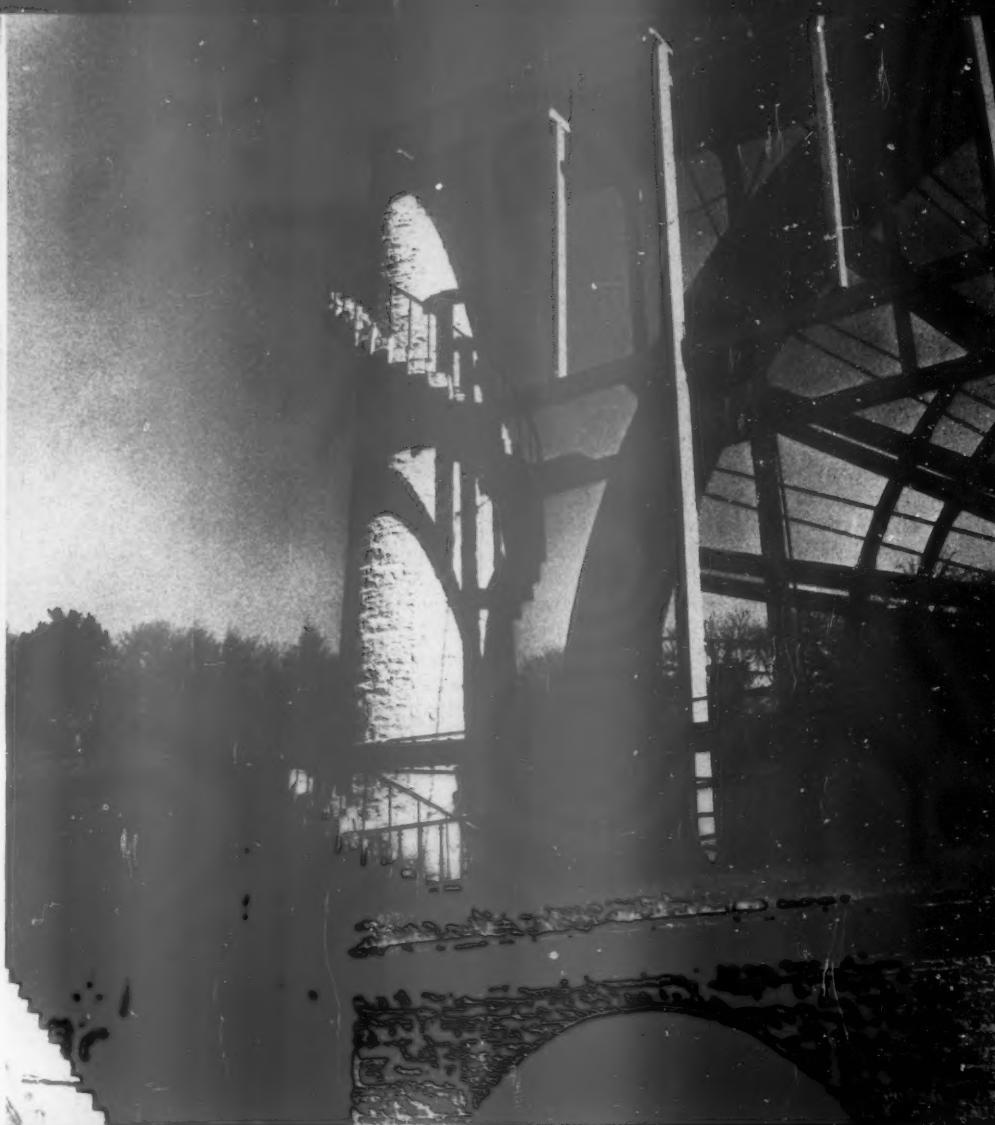
*Most functional tradition buildings disappear as soon as they cease to be functional.* Lady Isabella, the Laxey Great Wheel\* in the Isle of Man, is a happy exception. It is exceptional in many other ways too; probably the largest water-wheel of its type in the world (diameter 72 ft. 6 ins.) it was built in 1854 as a pumping engine for the Laxey Mining Company (engineer, Robert Casement); the wheel operated a system of rods 600 feet long, carried on a viaduct and attached at the other end to a pump on the mine shaft. The water used came from the surrounding hills, rose by hydraulic pressure to the top of the tower and was fed onto the wheel pitch-backshot (i.e. underhand); the normal overshot wheel would have required so much shrouding to prevent water spilling out of the buckets that it would have been uneconomic. The apparatus for water collection is incredibly ingenious, some of the water being used nine times over. The mines closed down in 1929 and after ten years the wheel was bought and repaired by Mr. E. C. Kneale, of Laxey, a local builder, who couldn't bear to see such a fine thing go to ruin (there are plenty of British industrialists in similar circumstances who could and have). He repainted it at his own expense and the splendid result can be seen opposite. The Manx Government now keeps a fatherly eye on it, recognizing that it is one of the best buildings on the island. It is in fact in a class of its own because of the complexity of function, a complexity equivalent to today's atomic plants and electricity sub-stations. When faced with such a problem the nineteenth century gave it inspired and decorative inflection of structure: all we seem to be able to give it is desperate shrubbery.

Ian Nairn

\* Much of the information in this note comes from a delightful privately printed book on it by Anders Jespersen, obtainable from Mr. Kneale at Laxey, price £1. Illustrations also appeared in AR December, 1956, page 406.



1



2

**Lady Isabella:** four views of the Lavery Great Wheel. 1, the viaduct carrying the system of rods from the wheel to the pump in the mine shaft. 2 and 3, the tower which carries the water to the top of the wheel and the ramp from which the water drives the wheel pitch-backshot (i.e. anticlockwise). 4, close up of the wheel hub and axle: the axle is 17 feet long and weighs ten tons. The colour throughout is black and white.

3, 4



## HISTORY

### WEISSENHOF

*The Interbau Exhibition at Berlin in its early preparatory stages advertised the rebuilding of the Hansaviertel as an unprecedented enterprise* —an estate in a town commissioned for an exhibition from architects from a variety of countries and built to become part of the permanent townscape. The contention was an error. Exactly thirty years ago, in 1927, Stuttgart did the same. The Deutscher Werkbund under the same conditions built the Weissenhof-Siedlung. It is true that it was all on a more intimate scale without point blocks and restaurants and a Congress Hall, but it was the same nevertheless—the architects in that case being

P. Behrens  
Le Corbusier  
R. Döcker  
J. Frank  
W. Gropius  
L. Hilberseimer  
J. J. Oud  
H. Poelzig  
A. Rading  
L. Mies van der Rohe  
Hans Scharoun  
Adolf Schneek  
M. Stam  
Max Taut  
Bruno Taut

What does the Weissenhof look like now, after one generation, after the anti-modern Nazi regime and after the bombing of the war? The following pictures and remarks provide the answer.

Of the houses, the following are fairly well preserved. Mies van der Rohe's block of flats, 1, the terrace of cottages by Oud, 2, and the villas by Schneek, 3 left, and Scharoun, 4. On the right in 3 is Le

Corbusier's famous house for one family as it was, 5 shows it as it is and in front of it Le Corbusier's two-family house. Both were damaged but have been restored after a battle last year when the Württemberg Treasury intended to pull them down. Damaged and repaired also is the fine terrace by Stam, 6. Preserved only as a fragment is the house by Bruno Taut, 7, preserved but ruined completely by reconstruction to different plans is the house by Frank. The block of flats by Behrens, 8, has been equally thoroughly ruined by receiving a pitched roof. The tower in the photograph does not belong to it, it was built separately in 1929-30. This interference with some of the houses in conjunction with the complete disappearance of the houses by Döcker, Gropius, Hilberseimer, Poelzig, Rading and Max Taut and with the erection of new houses on the estate in a tame municipal style, 9, has reduced the impact of the Weissenhof most deplorably and, it must be said, unnecessarily.

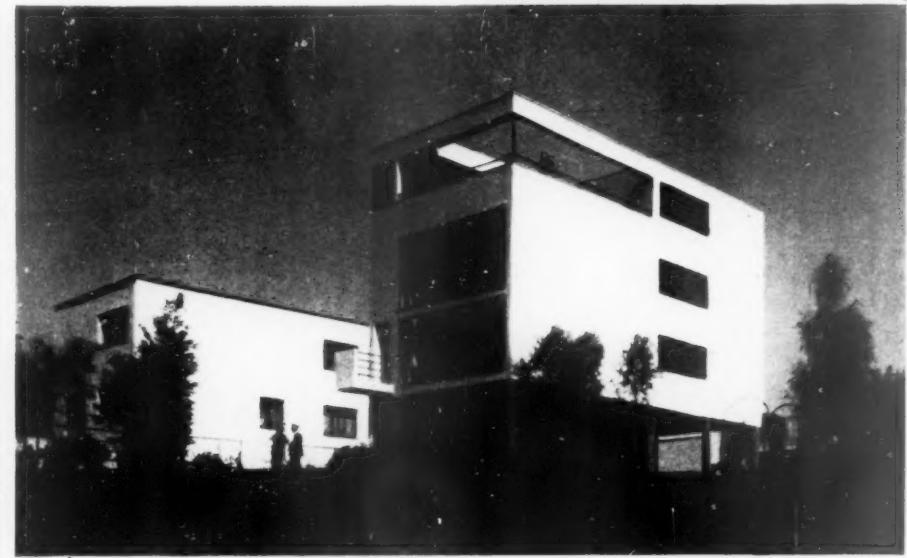
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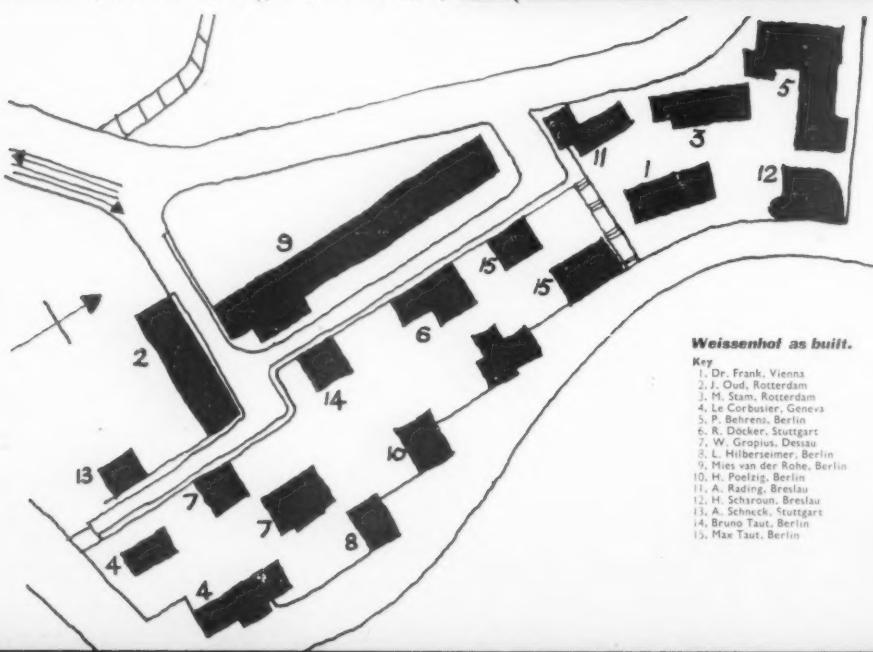
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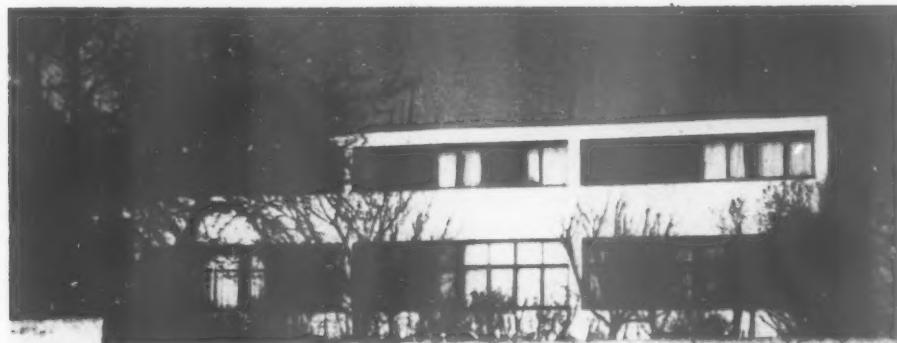
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6



7



8



9

## EXHIBITIONS

### MILAN TRIENNALE

The Milan XI Triennale gave exhibitors a baited hook; and it must be admitted that most countries swallowed it whole. It provided anonymous spaces inside the Palazzo dell'Arte for display of furniture, industrial design or textiles, and anonymous pavilions outside in the Parco, 1 and 2, made up of steel I-joists, wood and corrugated asbestos, in which exhibitors were free to produce typical contemporary rooms.

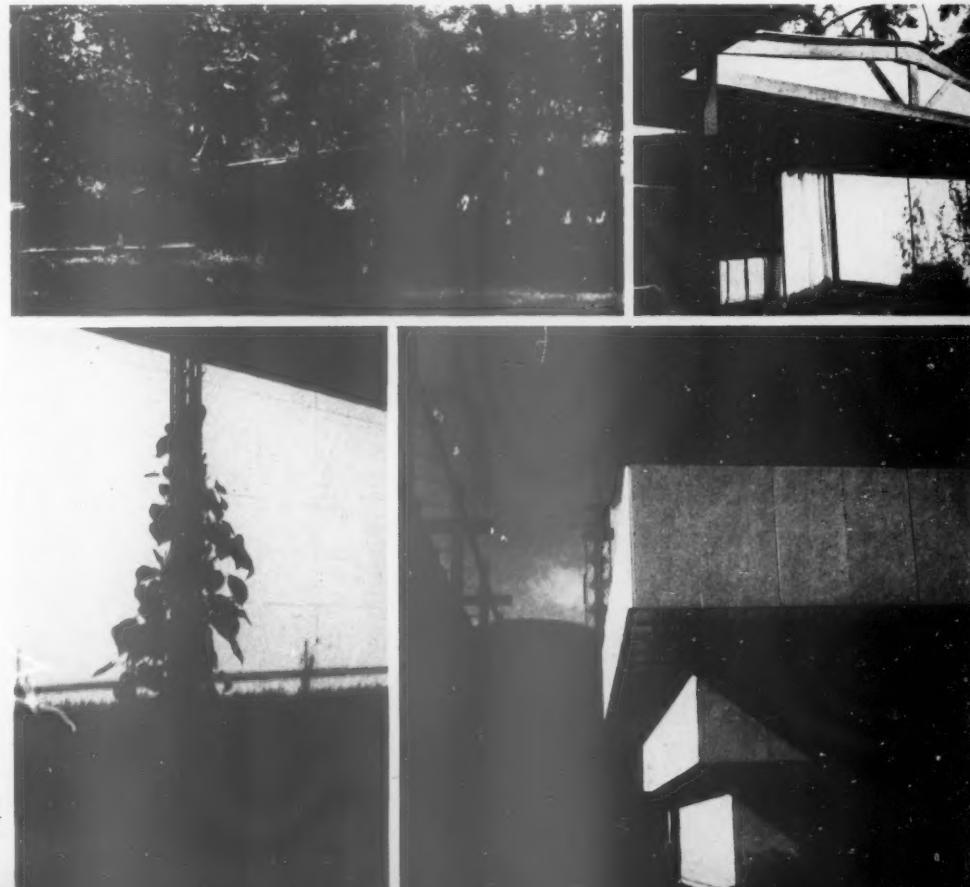
In this situation there were three alternatives. The first was to do nothing to the space provided and leave it to the exhibitors

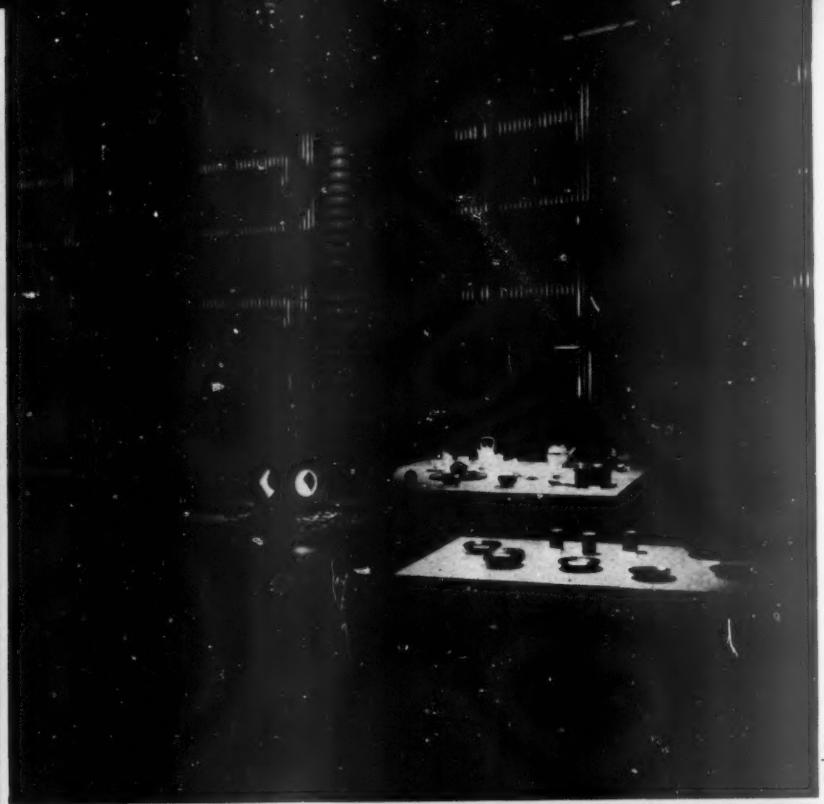
—in which case the exhibits had to be very good and very coherent; and here was the baited hook. The second was to go it alone and either have a separate pavilion or make the allotted space unrecognizable. And the third was to make imaginative use of the given spaces themselves: to make an artistic virtue out of necessity. The Triennale gave a lead by providing a fine example of this last technique in the walkway between Palazzo and Parco, a ramp made up of simple 'Safim' angle sections which make a more effective pergola, 3, than the most elaborate contrivance. The same angle sections were used to frame a modular rectangular tent for the textile pavilion, by Eduardo Sianisi, 4 (ramp on left, Palazzo beyond), where again the extreme contrast of textures was more effective and much cheaper than an arty bit of decor.

The countries, all too many, which relied on the exhibits or the furniture can be

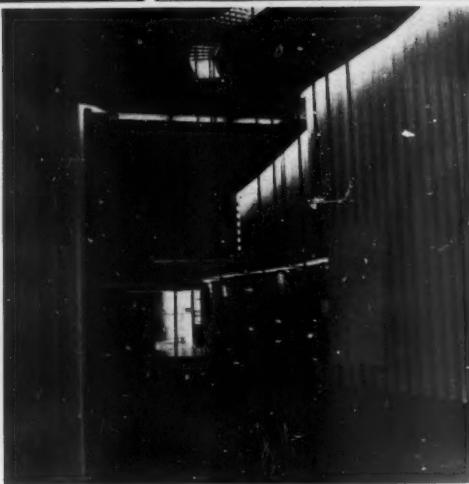
quickly dismissed. Only the Finns produced a coherent and individual scheme out of their rugged unstained wood and chunky design, with the Danes coming a moderate second in producing furniture where at least there was none of the awful intellectual snobbery that contemporary design seems to premise. Most of the rest were like national parodies: France a section of a *grand magasin*, Canada a travel agency, Sweden a psychologist's waiting room. Belgium, always the joker of Europe and design, produced such a conjunction of odd things under the heading of industrial design that the room was crazily effective in its own right: rifles, a junction box, ornate leather-bound books, and something that looked like a large porcelain dragon.

In the second category, the USA went it alone with a ham geodesic dome in the Parco by Paul McCobb, 5 overleaf, and a ham message to go with the exhibition of communications equipment inside it: 'whatever characteristics (the designer) may give them, they are never somber. They help to make Americans one people, their life gayer at leisure and more efficient at work.' Gio Ponti designed a squat, aluminium pavilion to show the different uses of aluminium prefabricated cladding using the 'Feal' technique designed by Giovanni Nalongo—perhaps inevitably it looked rather like a drunk prefab, 6 overleaf, and approximated to the buildings one fears that the Milanese architects are likely to erect in aluminium. The exhibits probed much deeper





5  
—  
6 7



8,9,10

**milan triennale:** 5, U.S. pavilion. 6, aluminium pavilion. 7, Japanese room. 8, Spanish room. 9 and 10, Czech room.

**interbau:** 1, Congress Hall by Hugh Stubbins. 2, le Corbusier's Unité (Type Berlin).



1,2

into the idea's potentialities and ranged from models of complete buildings to a single L-shaped bathroom unit incorporating a square bath, bidet, w.c. and basin. In the Palazzo, the only country to use this technique was Japan,\* who did it brilliantly, 7, to produce an equivocal mixture of inside and outside space, chiefly by transforming the floor with tiled paths and loose pebbles. This, by Junzo Sakakura and Kiyoshi Seike, was purely International Style design, in the sense that it could have been fitted into any exhibition space, whether in Milan or Manchester, but it was very well done.

Finally, that small band of countries—an odd band too—to accept the challenge of the Triennale's anonymous spaces and to exploit it. Of the pavilions, the only one to treat the room as part of the garden exhibition outside was Yugoslavia, by Mario Antonini and Niko Kralj, and this sensibility transformed the gauche but humane furniture. It ought to be a truism that an open plan can't stop at the windows, but nobody else realized it. Indoors, Norway suggested extreme multi-spatial complexity in a very small space, by Arne Körsmö: a trademark which readers will recognize from AR Feb. 1957—Germany provided a very good room inside the Palazzo by Arnold Bode, a huge oblong divided up by sets of oblong strips at right angles to one another with a colour scheme of black, white and red, plus the accents of draped textiles. Spain conquered its square room by the simplest and most elegant of formal devices (by Francisco Ferrer and Jose Garcia de Paredes) of inscribing in it a circle of fine wire mesh, 8, with some of the exhibits inside the circle and some outside in the corners, completed by a black ceiling and blue-white-black tiled floor—another reminder, like the Japanese section, that for this sort of exhibition the floor is perhaps the most important plane surface in the room. But the best display of all† came from Czechoslovakia. In a big oblong room devoted entirely to Czech glass design, Frantisek Tröster divided up the middle with a double-S shaped wall. One side was white, and housed black-painted Miesian display frames, 9, the other was dark and mysterious, with top-lit cylindrical display frames seen against a ripple background of Royal blue from floor to ceiling, formed quite simply by stiffened curtains, 10. As so often, the most commonsense solution of all worked like a charm: the curtains were superbly rich and could be seen to be curtains: the spaces were in perfect counterpoint and could be seen to

be on either side of the same wall.

What the UK would have done, no one can tell: there was, once again, no participation. The only hint that there was anything stirring in the Old Country was our part in the large and admirable exhibition of modern architecture in photographs and models. That Britain had its fair share in this (with both the pioneer suburbs and new work like Harlow and Roehampton) was due not to the activities of many underworked officials but of one overworked enthusiast, Dr. Pevsner. Is Whitehall still not convinced that the relatively small cost of British participation would repay itself handsomely? The present official stinginess may well rebound on us very smartly, in the form of countries which work harder at both ends than we do, notably, of course, West Germany and Japan, both with good lavish displays at the Triennale. If it does rebound we will have deserved every bit of it.

Ian Nairn

single-family houses became accessible to viewers: those by Sepp Ruf and Werner Fauser, which seem to have been both admired and deplored for the *rustikalen Effekt* of their brickwork; and the atrium-houses by Arne Jacobsen, which were among the most eagerly awaited small structures in the exhibition. And as a general boost to the tone and scope of *Interbau*, its final weeks also embraced an exhibition of contemporary building for the German Evangelical Church—which must have left Iron Curtain visitors with some curious and disturbing memories to take back with them across the zonal frontier to the *Beaux-Arts* aridities of the Stalin-Allee.

Michel Santiago

#### PAINTING AND SCULPTURE

*The ICA has recently held three exhibitions connected with the origins of art: bark paintings by Australian primitives, paintings which might be called pre-primitive, produced by two chimpanzees, and neo-primitive sculpture by William Turnbull.*

The paintings by the chimpanzees Betsy and Congo must be considered a triumph for evolutionists; they bring our 'close relations' a little closer, and offer no comfort to those who still cling to the hope that man has not evolved entirely by natural selection. These paintings disclose incontrovertible evidence of an instinct for pattern making. The paintings produced by Betsy, a seven-year-old female in the Baltimore Zoo, are strikingly different from those made by Congo, the two-and-a-half-year-old male in the London Zoo, and both of them have something approximating to a personal style.

Their work has a tasteful look which is simply a by-product of human supervision, and has no bearing on their pattern making: in Betsy's case it can be ascribed to the ration of carefully chosen paint blobs placed on the paper before she smears with her fingers; in the case of Congo, who uses brushes, it is due to the fact that he is allowed to choose only one colour at a time, and does not himself dip the brush in the paint.

Congo invariably produces a roughly fan-like configuration of downstrokes sloping inwards, 1, overleaf, and Dr. Morris, who supervises Congo's activities and has contributed an interesting preface to the ICA catalogue, tells me that when Congo starts to dab at the paper instead of making strokes it is a sign that he wants to make a fresh start on a clean piece of paper. His work is more stilted than Betsy's,

\* To be fair, to do this must have cost a lot more than some countries were prepared to afford. The Triennale catalogue ought really to include the cost of each pavilion.

† Apart from one awful social-realist tapestry, quickly left behind.



1



2

partly because he is very young and partly because it is more difficult to paint with a brush than with the fingers.

There is no doubt about Betsy's dexterity. She uses her fingers with firmness and delicacy, and the movements and countermovements of her curvilinear strokes, which take the impress of her nails and gain light and shade from the varying pressure of her finger-tips, 2, must be in some measure the fruits of experience. Nevertheless, there is a gulf between their work and that of even the most primitive of human beings, for they show no sign whatsoever of being capable of making symbols.

The paintings on eucalyptus bark by Australian aborigines were collected by Mr. Charles Mountford on expeditions to Arnhem Land and Melville Island. The art of this 'stone age' people ranges from 'X-ray' representation, as in the picture of a spirit-man spearing a kangaroo, to geometrical abstraction which is not pattern making but a language of symbols referring to myth, topography and aboriginal astronomy. I see that one critic has tried to make a virtue of this absence of symbol from the 'free abstractions' of Betsy and Congo, as if they represented an alternative, non-geometrical, non-figurative tradition!

Dr. Morris doesn't of course make any such claim, but I don't understand why he says that comparisons made between the action painting of humans and the action painting of apes are 'odious,' since he himself points out the resemblances. 'Both are abstract,' he says, 'and neither

can be described as "geometric." Also in both cases the moment of action involved in the creation communicates itself very forcibly.' Then he adds, rather summarily: 'the methods used may be similar, but the brains involved in the two cases are, after all, very different.' In any case, the term 'method' seems scarcely to apply to the chimpanzees, for their work does not appear to have reached the stage of being a procedure for attaining an object. If, however, I am wrong, I cannot but agree that the very different brains involved make it unlikely that they have the same object in view as human action painters. It seems to me that a good deal of action painting represents the final, paroxysmal stage of twentieth-century primitivism, and that under some atavistic compulsion that I only dimly and shudderingly understand, a number of gifted painters manage to reflect in their work something analogous to a state of pure, idealess animality. I cannot think that the chimpanzees have such an object in view. I am now keeping my eyes open for 'free abstractions' which show signs of becoming cold, smooth and slimy, for it will probably mean that someone is beginning to envy the reptiles.

Action sculptors are making less progress than the painters in the journey back-

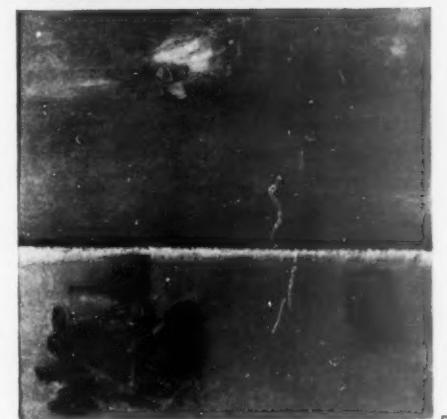
Giacometti, Dubuffet and Picasso, and a number of cycladic figurines.

Turnbull's crudity is the result of a special kind of refinement; John Bratby's, on the other hand, seems to spring from a vulgar, I'm-all-right-Jack delight in his own talent and his fearsome environment. One doesn't think of him as having been an art student but rather as a new kind of art trainee, and in the frieze-like paintings he recently exhibited at the Beaux Arts, 4, he has become the master of a decorative style which exemplifies and celebrates a raw and voracious materialism.

By comparison, Ruskin Spear's *genre* paintings of beach and bar look remote and synthetic, 5. Spear is one of the artists who were chosen by the art critic of *The Observer* for his anthology of contemporary English painters at Tooth's. The others were Mathew Smith, Ivan Hitchens, Edward



wards, and, with their reluctance to eliminate preconception altogether, do not seem likely to get much further back than the stone age. William Turnbull, for instance, in his one-man show at the ICA seems content to record his spontaneous creative acts on rudimentary human effigies. In the 'Standing Female Figure' reproduced here, 3, the artist's spontaneous creative acts include a charmingly decorative treatment of surface produced by the imprint of corrugated paper, and what I take to be an unpremeditated double image, which provides a girl's head if one looks for a face on the left, and the head of a bearded man if one switches one's glance to the right. The exhibition as a whole has the look of a neatly contrived effect of powerful clumsiness, and conveys the impression that Turnbull is trying to escape from his imaginary museum by forgetting everything it contains, except, maybe, a few choice examples by

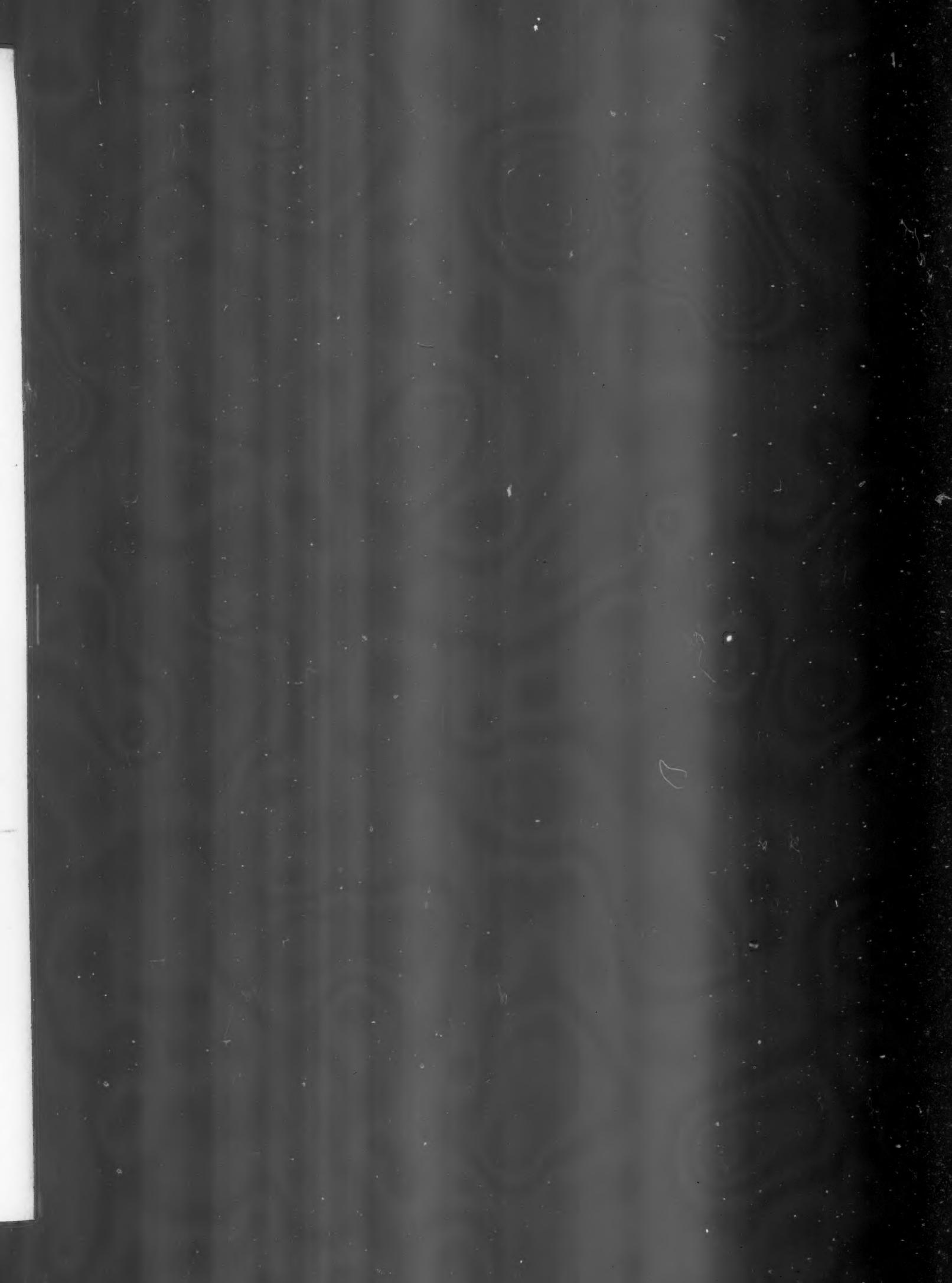


Burra, Alan Reynolds, Anthony Fry and Robyn Denny. Between them, they created an extraordinarily good-tempered atmosphere, as if they had agreed to put aside any differences they might have, in order to pay tribute to Neville Wallis's endearing personality.

Robert Melville



3



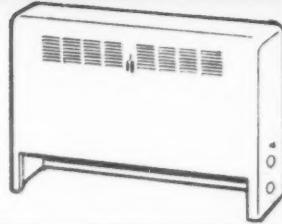




A detail from the Reredos designed by Joseph Ledger, A.R.C.A. and executed by Carter & Co. Limited for the Church of St. John Fisher, Rochester. H. S. Goodhart-Rendel, C.B.E., M.A., P.P.R.I.B.A., Architect.



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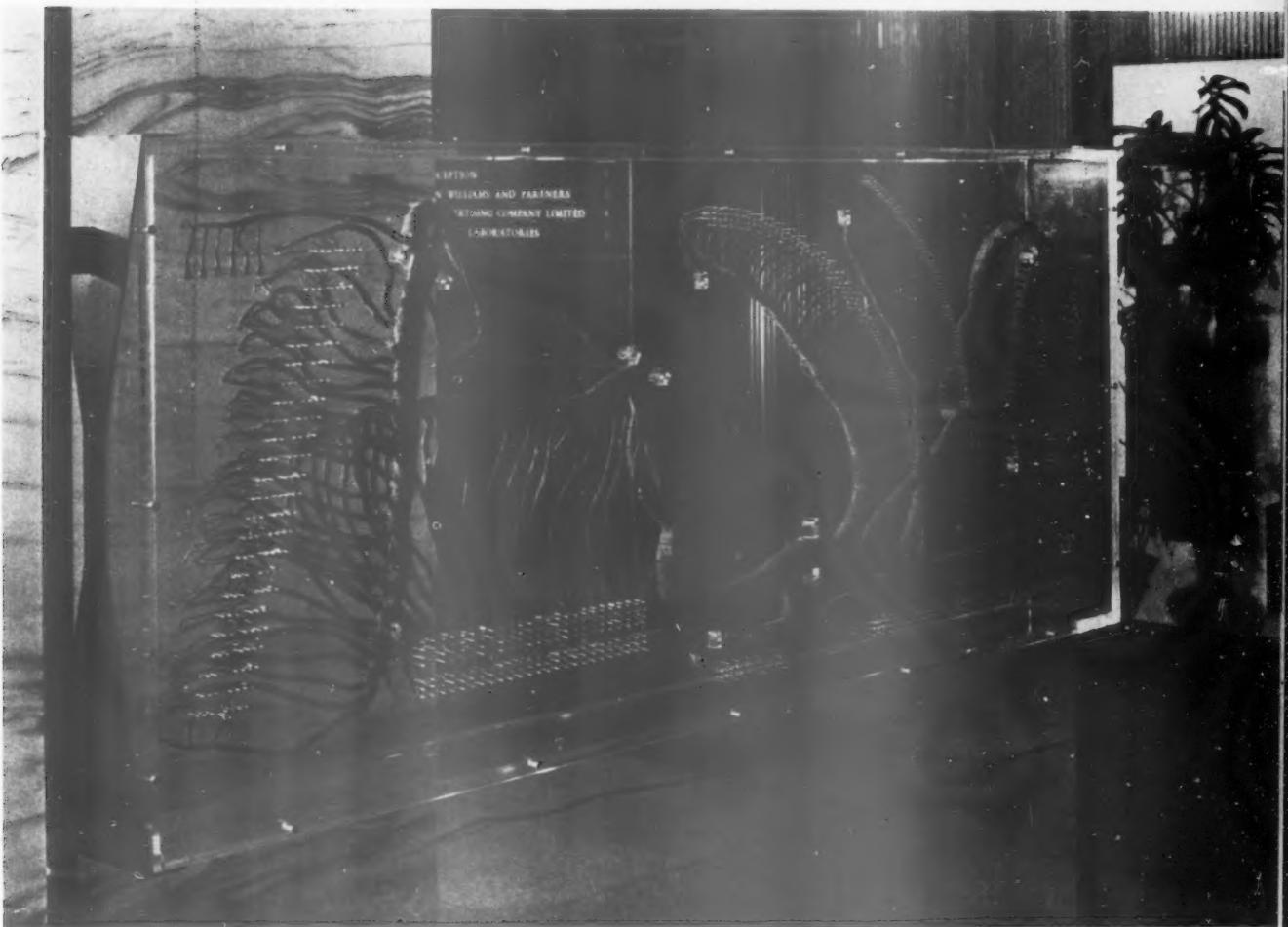
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- 1 *interiors*
- 2 *design review*
- 3 *techniques*
- 4 *the industry*



1, wiring harness from a calculating machine in the main entrance.

## 1 INTERIORS

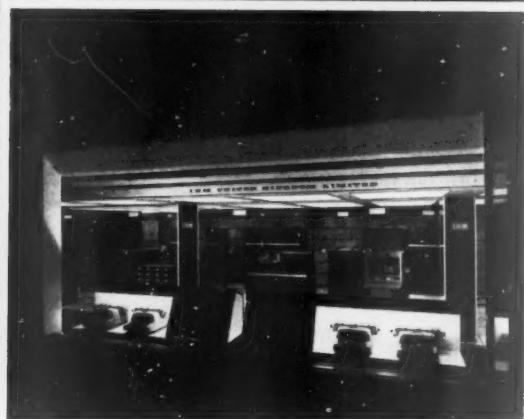
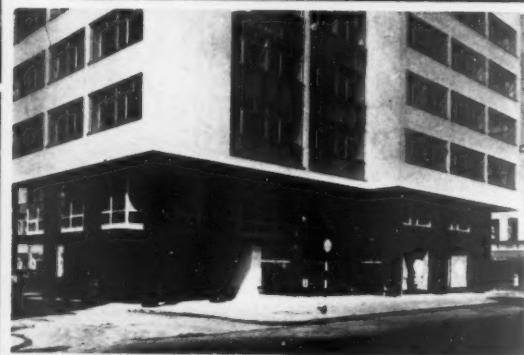
### SHOWROOMS IN WIGMORE STREET, W.1

Architect: T. Ritchie; Interior Designer: Julian Green

The computing centre and showroom at 101 Wigmore Street is on the ground floor of the office space occupied by International Business Machines (United Kingdom), one of the principal lessees of the Wigmore Street development by Cecil Elsom. The main problem in installations like this is that of dispersing the heat generated by the computers. In this case the heat amounted to 234,000 B.T.U's per hour and is removed by overhead extract trunking. A large 700 Series IBM computer will be

added shortly and will generate another 500,000 B.T.U's per hour. The headroom is thus reduced to 7 feet 7½ inches and thereby increasing the noise level. The maximum was to be 50 dbs and the main ducts were therefore acoustically treated and the duct sections kept as near square as possible. The acoustic-tiled false wall at the back of the showroom covers the main air conditioning ducts. The platform is covered by heavy linoleum and the public gangways with

[continued on page 421]

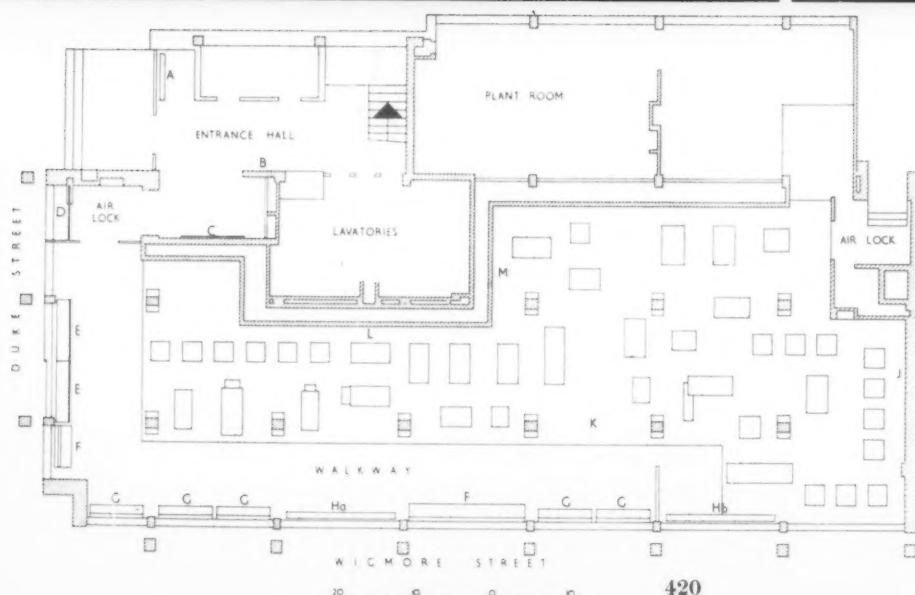


2,3

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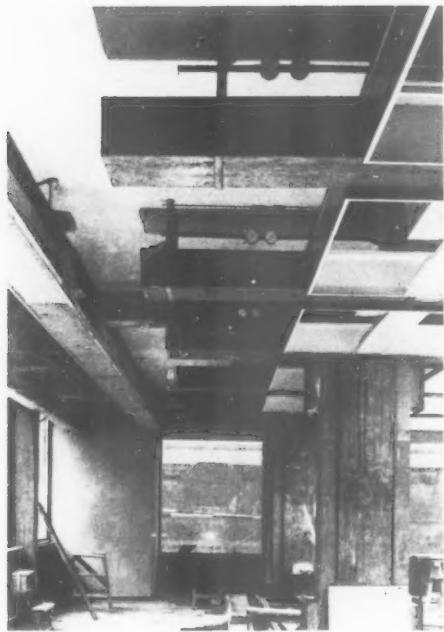
5,6

2, reception area showing treatment of column casing. 3, manager's office from typical secretary's office. 4, exterior from Wigmore Street. 5, part of the display of calculating machines. 6, night view from Wigmore Street showing portable typewriter units in position.



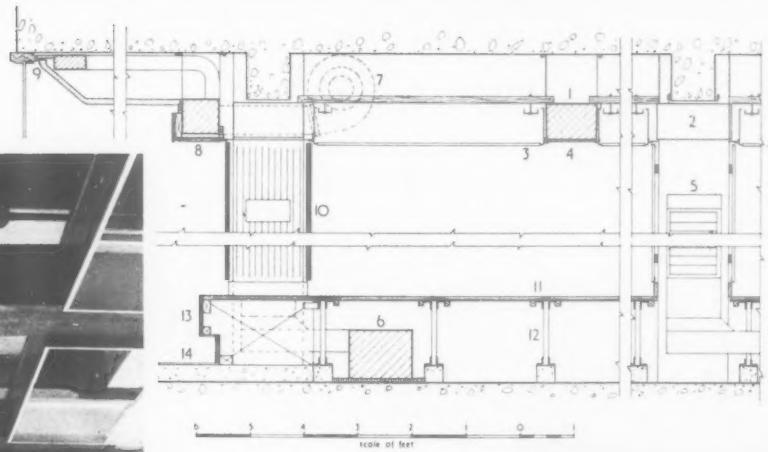
20 SCALE OF 50FT

SHOWROOMS IN  
WIGMORE STREET, W.1



continued from page 419]

plastic. In order to reduce drumming on the machine platform to a minimum, the cavity has been filled with fibre glass pillows, and an asphalt membrane separates the platform from the concrete floor. The machine platform was constructed of lattice beams (laid on the existing concrete floor) which support modular floor panels of  $\frac{1}{2}$  inch resin-bonded birch ply, tested to 800 lb. point load. This accepts the necessary machine connecting cables with their critical bending radii together with the underfloor air-trunking. Two faces of the structural columns carry airflow trunking and there are ventilation exits between cheeks of copper-faced plywood. These air outlet grills carry the company's logotype (the three letters IBM which are the company's 'signature') in the form of magnetic plate, the position of which can be adjusted. The specially designed lighting units, using fluorescent tubes and ballast lamps in place of chokes, form a grid ceiling which is supported by air-conditioning trunking. A compression duct, forming the edge of the ceiling unit, collects hot air from the ceiling void above the lighting grid, builds up pressure with centrifugal fans and blows air on to the plate glass windows to prevent misting. An overhead track parallel to the windows runs the length of the showroom and is used to move heavy display structures.



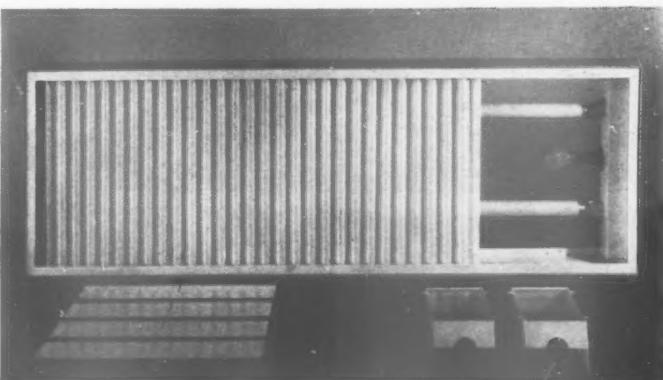
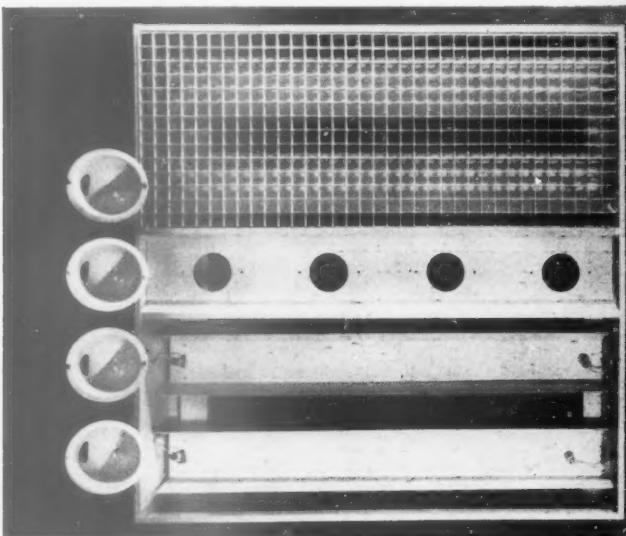
section through ceiling trunking.

key

1. return air duct suspended from r.c. slab and supporting light fittings.
2. dummy columns, supporting light fittings.
3. special light fitting 4 feet 3 inches by 4 feet 1 inch with 2 circuits with two 4 feet fluorescent lamps plus two 65 w. ballast lamps in each circuit.
4. asbestos panels masking ducts.
5. air supply ducts up the column faces, fitted with 2 no. 'Deflecto' grills.
6. underfloor supply ducts up to main duct line from showroom wall.
7. fans drawing heated air from above ceiling and supplying de-mist system through pressure duct.
8. pressure duct in perimeter of false ceiling.
9. secondary duct and injector opening of window de-mist system in window head concealed by fibrous plaster sub-ceiling.
10. column casing of steel framed copper-faced plate. Asbestos panels covering. Open grill of 16 bars to ducted faces. Magnetic trademark on grill.
11. 2 feet  $0\frac{1}{2}$  inch by 1 foot  $1\frac{1}{2}$  inches floor panel of  $\frac{1}{2}$  inch resin bonded exterior grained with  $\frac{1}{2}$  inch lino top finished with 'Phenolicol'.
12. 14 inch Sommerfeld lattice beam on 4 inch concrete curb.
13. platform edge of vertical-grain mahogany Warerite.
14. plastic floor finish to walkway.

7. ceiling ducts before boxing in, see section above right.  
Compression duct on left-hand side, with two portions ready to receive centrifugal fans.

8. component parts of showroom lighting unit, each contains four fluorescent tubes and four 60 watt ballast lamps, directed through metal louvres.



9. detail of general office lighting fitting showing the louvre replaced with corrugated vinyl sheet.

10. desk for typewriter engineering students. Drawers open both sides, a disc running in a grooved sail preventing the drawer being pulled right through.



## GARDEN CENTRE IN WIGMORE STREET, W.1

Designer: F. M. Gross



11



12, 13



14

The garden centre for Fisons is on the ground floor of 95 Wigmore Street near the IBM (United Kingdom) showroom. It has a total floor area of 22,600 square feet, which has been divided into two main rooms by a double-sided multiple display unit combined with flower carrying fins. The counter in front of it is natural waxed pearwood with a black and grey top. There are also three displays in this part of the centre: Human Health, Plant Health and Chemicals for Industry. The whole centre has been designed to be seen from the outside with a clear view through

to the rock garden beyond, whose purpose is to display specially chosen sub-tropical plants.

The Centre is heated by warm water panels carried between the lower plaster ceiling and the upper corrugated plaster ceiling which carries the light sources for the showroom. A few extra convector are flush-recessed into the walls. The sgraffito murals were carried out by J. Dernbach and designed in co-operation with the architect.

11, the horticultural advice bureau looking through the flower-carrying fins.  
12, one corner of the main showroom. 13, the reception room. 14, horticultural advice bureau from street.



GARDEN CENTRE IN WIGMORE STREET, W.1

15, showrooms as seen by an outside viewer looking in at horticultural advice bureau, 16 and 17, Wigmore Street front showing contrasting effect of day and night lighting.



16



17



## 3 TECHNIQUES

### TUC BUILDING

by Lance Wright

Owing to the rapid adoption since the war of lightweight structures and of new, or at least untried, finishing materials, modern architecture has had to endure irregularities of finish and a susceptibility to wear and dirt which would not have been tolerated by earlier generations of architects. Whatever its contribution to planning or to architecture in the large sense, there is no doubt that the TUC Memorial Building sets a new standard in finishes. It seems reasonable therefore to devote this technical postscript to the presentation in the front of the paper (see pages 370 to 388) to this one aspect.

An examination of the finishes of the TUC building reveals at once a certain anomaly. The finishes themselves are nearly all traditional: marble, slate, mosaic, hardwood, bronze, lead, plaster. There is, indeed, some aluminium on the façade and there is a discreet amount of acoustic tiling in the passage ceilings and elsewhere, but these remain the exceptions. What makes this building so interesting is the manner in which traditional materials have been used to produce those effects of floating

planes, of light and of machine precision which we rightly associate with modern architecture. To achieve this, the architect has evolved a grammar of detailing which is perhaps best described by considering in turn certain characteristic sequences. A reinforced concrete structure is in effect an assembly of rough planes which perpetually moves and breathes and which requires to be clothed in some manner on virtually every face; it is in the treatment of the lines of junction between the

different parts of this clothing and between this clothing and such lighter structures as windows and partitions which bridge in between, that so much modern building has come to grief and where this building so conspicuously succeeds.

#### the External Walls

Perhaps the concept which differentiates this most readily from other good quality building of between-the-wars is that of built-in maintenance. It is ironic that it is

only when the nation has determined on a policy of clean air that architects should have decided for the first time in history to provide for the systematic wiping away of dirt; but there are two factors which have led to this. The first is the growing acceptance of factory made, precision components which require relatively frequent cleaning to maintain their effect, and the second is the growing appreciation of the importance, when building in cities, of the reflection factor on walls to obtain good lighting

at low levels. This second factor is particularly significant in the TUC's building owing to its confined site and courtyard plan and it is for this reason that the courtyard walls are mostly clothed with light coloured mosaic. These walls give admirable lighting in the lower rooms but they will only continue to do so if they are kept clean; and, to encourage this, a double rail has been fixed on the roof behind each parapet and the architects have helped to devise a pair of running davits to enable every part of the main walls (except the memorial wall itself which has other arrangements) to be safely and cheaply cleaned by the TUC's own maintenance staff, 1. Thus, though the wall structure is so far removed in its nature from the curtain wall, and though most of the materials used on it are what our forebears (quite wrongly) considered to be self-cleaning, the total effect has more in common with lightweight post-war structures than might otherwise be expected.

Another detail which reminds us that we are, after all, in the presence of a machine age building is a device incorporated in the window head to ensure a true horizontal line. One of the most deplorable defects of curtain wall structures has been the failure to achieve that precision which is (or ought to be) implicit in the system. The architects realized that the same precision was implied by the use of the polished granite facing and that nothing would damage the integrity of the façade more certainly than if, on running your eye along one of the horizontals, you found that the line of the window head departed noticeably from the line set by the lower edge of the granite facing. To prevent this and to provide an opportunity for an exact truing of the continuous heads, lug boxes of a special kind were cast into the concrete (two per window) to permit vertical and lateral adjustment, 2, 3.

Another feature of all main façades is the use of a lead capping at the head and of a lead trough at the foot of every main vertical surface. Of these two the detail at the head is the most interesting, 5. In general the leadwork on this building is of a magnificence which must be unique in modern architecture. The lead capping comprises 5 lb. cast lead formed over 10 g. mild steel carriage plates. Each plate is rather less than 7 ft. 9 in. long (corner plates being mitred and welded) and the 1½ in. gaps between plates accommodate welts. Each 'leaded plate' thus formed rests on felt and is screwed down with four brass screws. The edge of each plate is turned down (inside, over the asphalt skirting, outside, over the granite face) and the effect is neat and convincing.

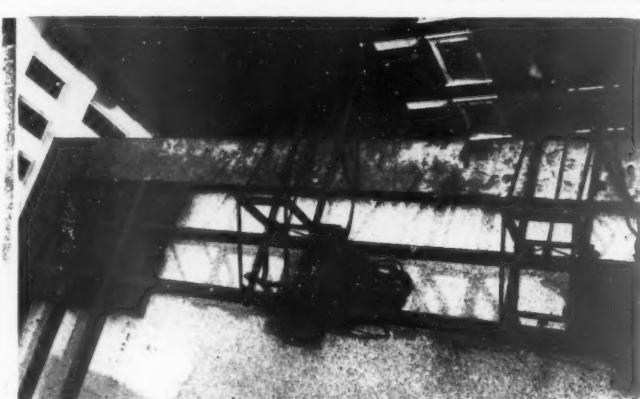
The windows (if we exclude those of the ground floor foyers which are of a different family altogether) are of two kinds: those of the special rooms (council chamber, committee suite, secretariat) are double glazed, of teak and often with mosaic covered r.c. mullions and transoms, while the office windows are of steel (hot dip galvanized and painted light metallic grey) with aluminium head drips, covers and external sills, 4. The interest of the window details (apart from the lug boxes mentioned above) consists in the internal treatment and centres round the architect's mistrust of plaster as a material for reveals. The treatment in the offices is to cover the structural concrete reveals with a pressed aluminium lining which runs behind the steel window section and is in turn covered, at the back of the mullion, by a

strip of softwood, 6, 7. The joint between aluminium and softwood is marked by a characteristic checking of the wood, but both are painted in the same light colour for reflection and avoidance of glare, as in traditional Georgian reveals, which suggests (to the non-professional eye) a conventional plaster reveal. A similar treatment is used at the head and real plastering only begins at the ceiling.

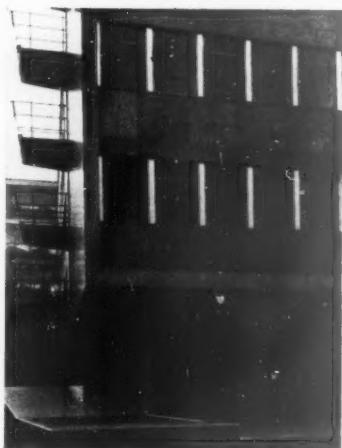
#### the Marquise and the Conference Hall Roof

The marquise gives the passer-by in Great Russell Street an opportunity to wonder at the leadwork which is everywhere so surprising a feature of the external skin. Structurally the marquise is a piece of concrete 'carpentry' of the kind that prestressing has now made familiar. Precast, prestressed beams cantilever forward from the face of the building, and to these are bolted ('morticed' might almost be the word) a somewhat similar prestressed fascia. Traditional patent glazing bars are

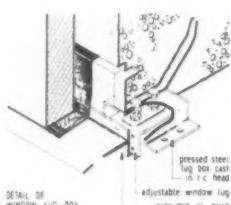
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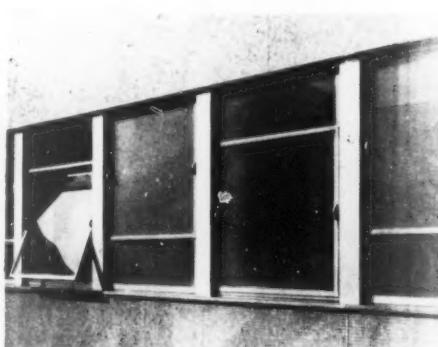
1. rail and davits for cleaning scaffold.



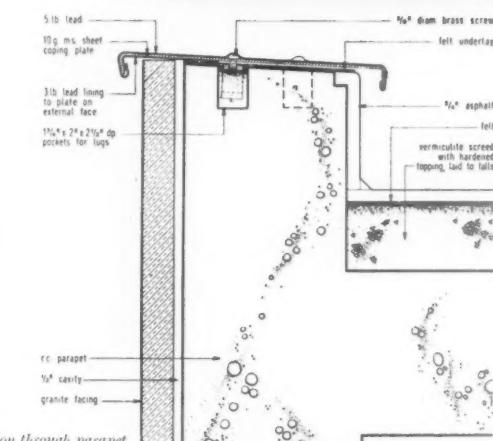
3. external view of office window.



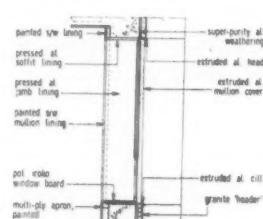
2. detail of window lug box.



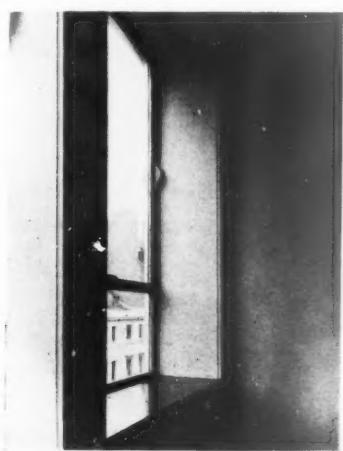
4. external view of office windows.



5. section through parapet.



6. section through typical office window.



7. internal view of office window.

continued from page 424]

secured near the top surface of each structural member to hold the glass and both these and each member are covered with a 5 lb. lead flashing. The fascia itself, however, has a full dress lead coping similar in kind to those which cap each wall and its forward edge is covered by a remarkable cast lead fascia which is secured to the concrete and protected against creep by mild steel hangers, 8, 9.

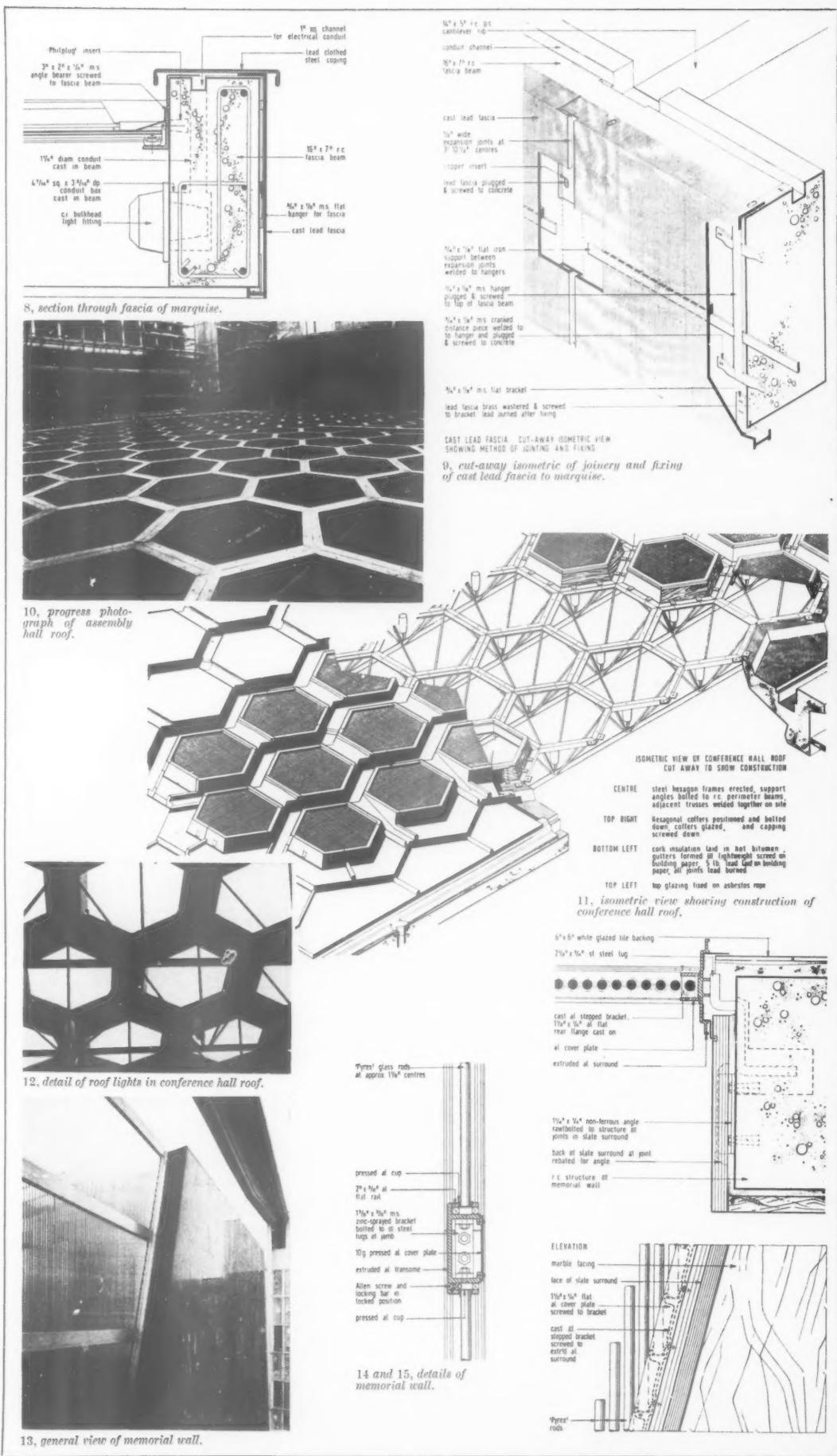
The conference hall roof, which is the *tour de force* of the building's coverings, is conceived in rather the same spirit, in that a system of construction which we have come to associate with lightweight structures is again invested with unexpected weight. The main bearing structure is a series of contiguous welded steel space frame trusses, the top boom of each truss being, on plan, a series of hexagons formed in steel angle, the points of each hexagon being connected to the bottom boom by a  $1\frac{1}{8}$  in. diameter m.s. tube, 10, 11. These trusses were shop welded and after being placed on site were site welded to their neighbours along the line of junction of the hexagons. When this was completed triple glazed rooflight units were mounted in the timber hexagonal coffers (172 in number) bolted on to the top of the steel space frame. The depth of these coffers was determined by the need to provide a sufficient fall in the zigzag channels formed between them. In, cork slabs laid in bitumen line the outsides of the wood coffers of the rooflights, the falls are formed in lightweight screed laid on building paper, and the entire space between lights is flashed with 5 lb. lead—also laid on building paper. As the wood coffers are tilted inward, and as a light fitting is fixed on the bottom boom at the centre of each hexagon, the pattern of the laylights is thrown into high relief and as each element in the repeating pattern is relatively large, the effect is to reduce the apparent size of the hall and to give something approaching intimacy. The coffers are painted off-white (Archrome 42), the plates on which they rest a deep grey (Archrome 46) and the remainder of the steel a lighter grey (Archrome 43), the motive for the choice of colouring being to throw the geometry into relief rather than to express the materials, 12.

#### the Memorial Wall

In its finishes the memorial wall (which closes the fourth side of the courtyard) has more in common with the remainder of the building than its form might suggest. These show the same preoccupations in the architect, for this must surely be the first monument in history to have built-in cleaning arrangements. The wall itself is concrete faced with green Genoa marble edged with Corris blue slate, but it is flanked and topped with a screen of toughened glass (Pyrex) rods, designed to interrupt the view of Lutyens' white tiled, narrow 'light' wells beyond; and above this again is a canopy, or rather a giant pelmet, to conceal not a curtain rail but a gantry for a cleaner's platform and a sparge pipe for the cleaning of the rods, 13. The glass rods are exceedingly strong and are unlikely to be broken in the course of nature but, for fear they should be, the fixing can be unlocked at the top of each to allow new rods to be easily inserted, 14, 15.

#### the Foyers Windows

One last element in the outside



skin which calls for special comment is the glazed screen which encloses the ground-floor and basement foyers. Since this screen weaves in and out of the structural frame with considerable freedom, it gives rise to a series of very taxing junctions which have been detailed particularly well. 16. Two of these are illustrated here. One is taken at the head of the horseshoe stair leading to the conference hall at the point where the stair roof enters the granite face of the facade; and the other is taken at the other side of the stair and at a lower level where the glass screen turns into the building, to pass on the inside of one of the structural columns, and compels a most intricate crossover between the vertical glazing and the edge of the structural floor. The essential of both these details is, of course, that the transparent planes of the glass should pass and repass the various barriers with a minimum of apparent fuss. This they do. Thus, to take the roof detail first, only the shallow bronze channeling and beading is allowed to read along the glass edge. 17. The lead fascia of the roof finishes so close against the channels that it adds almost nothing to the visible thickness of the junction, so that the thin dark line passes straight into the depths of the building without hindrance. Above, the lead of the fascia passes straight through the granite facing and turns at right angles (out of sight) to form a flashing. The same sense of effortless economy is given in the second detail (which is, incidentally, an internal shot), 18. The face of the edge beam coincides with the mullion. The mullion is formed of a mild steel T clothed in teak. Where it passes the edge beam, part of its depth is cut away to leave a comparatively narrow, dark line. This is sufficiently wide to mark the continuity of the glass it edges, but not so wide that it will unduly break the line of the edge beam.

The surface of the floor above is marble. The balusters pass through preformed holes in the marble slabs and are secured in a concealed core-rail which runs beneath the marble and is bolted to the concrete. There is thus no danger of movement in the rails splitting the marble.

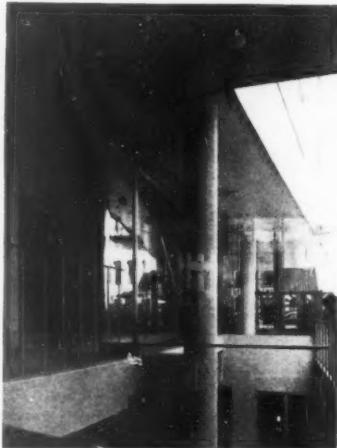
#### Internal Finishes

The internal finishes are the easier to discuss because they have been built up on a set of coherent principles. One of these arises from the architect's healthy fear of plaster cracks. The avoidance of all possibility of these has led to a very characteristic grammar of white surfaces. As we have already seen when discussing the window reveals, small and tiresome areas which are traditionally plastered, are usually metal covered and painted, 19. Fair face concrete, also painted, is even used round the edge of the ceiling of the conference hall itself. Where plaster was considered unavoidable (as, for instance, in the main foyers) it was designed to be laid as a continuous operation, with no dry joints. The really big ceilings were a plasterer's *tour de force*: an army of plasterers was lined up at one end of the ceiling and ordered to proceed *en masse* to reach the other end without a stop. In addition  $\frac{1}{8}$  in. gaps were left round all column heads to avoid cracking through structural movement, and similar gaps were left at the ceiling edge wherever plaster passes behind wood panelling.

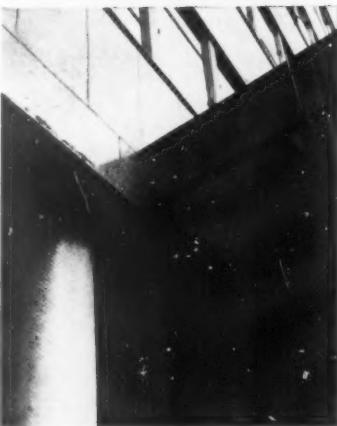
Another characteristic of the building is the use of wood as a wall finish, either as a veneer or as slats. Apart from painted softwood, only three timbers are in general use in the

walls: door and window frames are teak (except for the immense glazed sliding doors of the conference hall which are of Honduras mahogany, 20), the various forms of acoustic wall are Columbian pine, the most frequently met veneer is cedar of Lebanon (all of which, incidentally, is cut from a single tree), and other veneers are Jugoslav beech and crown elm. In a modern building the integrity of the wall is constantly threatened by the circumstance that it must conceal so much within its thickness: it must contain every kind of wire, tube and duct, and each of these will require outlets and often access as well. If we are not careful the wall will become a chapter of accidents. To avoid this happening here and to preserve the integrity of inside walls a certain grammar of detailing has been consistently followed. Window and door frames are invariably flush with wall or sill with square sunk quirks at their only mouldings, 21, 22; access doors in veneered walls (of which there are many superlatively neat examples) are invariably secret, without visible frames, 23, and most characteristic of all is the free use

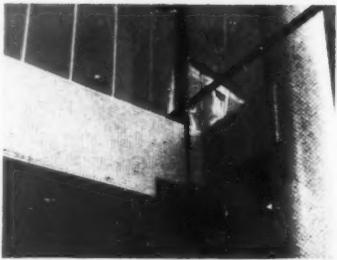
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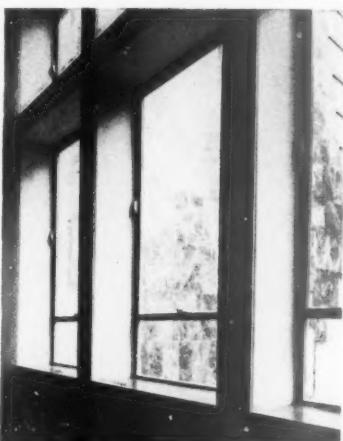
16. general view of glazed screen on Dyott Street facade.



17. detail of junction of stair roof, glass screen and facade.



18. detail of junction of glazed screen with balcony edge beam.



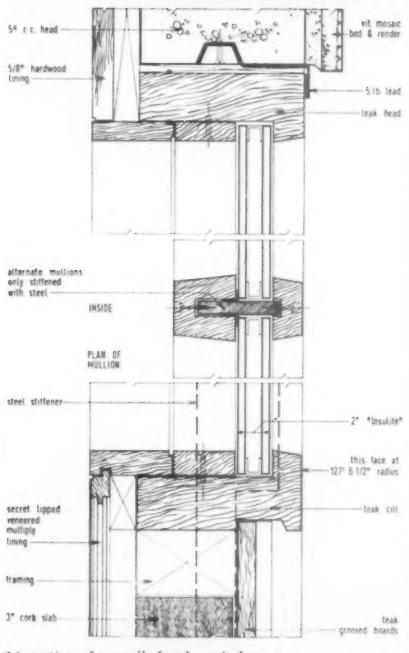
19. interior view of committee room windows.



20. sliding doors to conference hall.



21. detail of council chamber window.



22. section of council chamber window.



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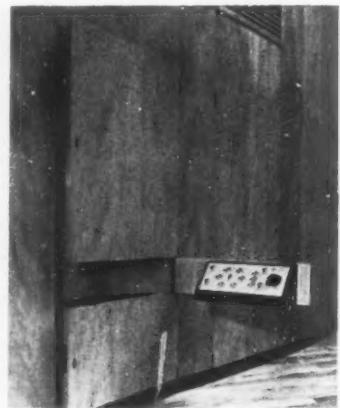


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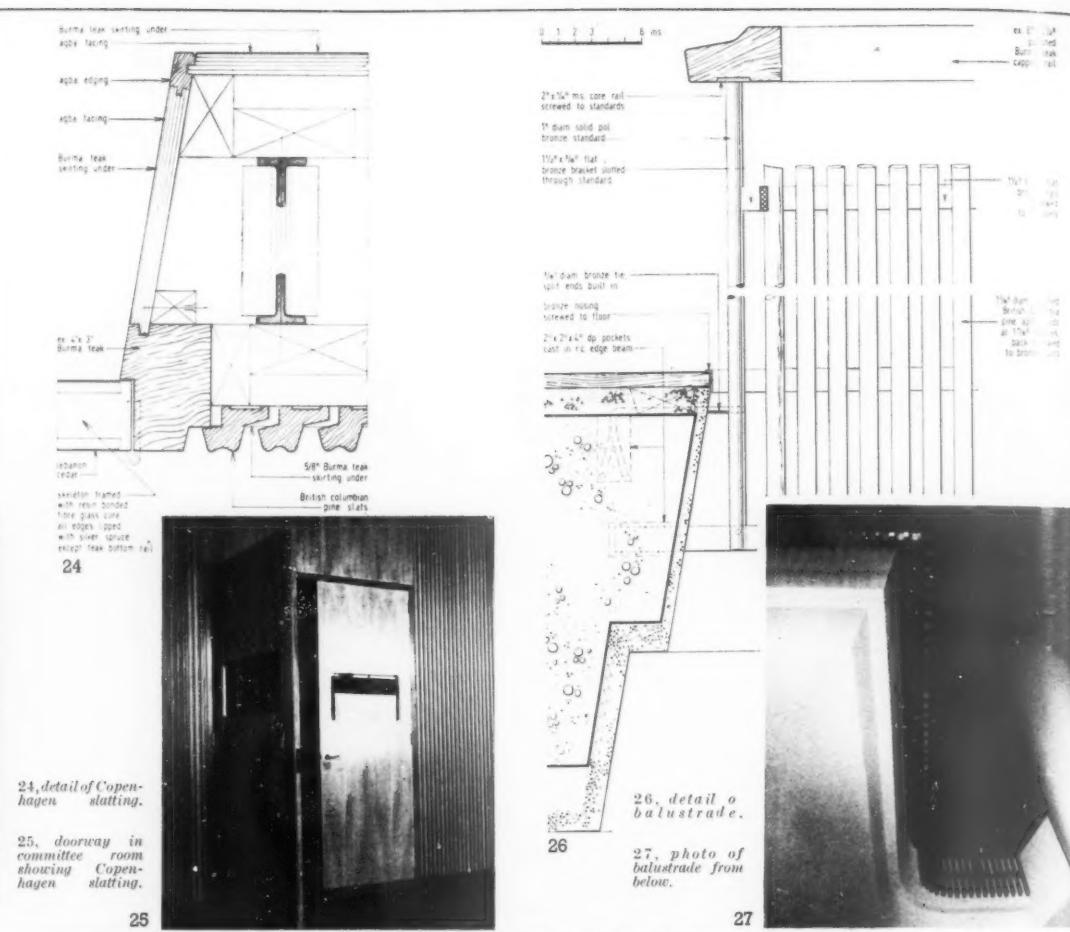
of Copenhagen slatting to serve the double purpose of sound absorption and the concealment of extract ducts and goodness knows what else, 24, 25. The rift sawn Columbian pine of which these slats are made figures importantly elsewhere and is used always with exceptional skill and care. It is used, for instance, on the curved balustrade which overlooks the upper foyer of the memorial hall, 26, 27. Here the slats are more properly described as rods as they are round in section and, being fixed vertically at close spacing somewhat forward of the balcony edge, are used to make a screen and to reinforce the curved plan shape.

The other use of rift sawn Columbian pine slatting, which must be the last item to be described in this

[continued on page 430]



23, access panels in conference hall walls.



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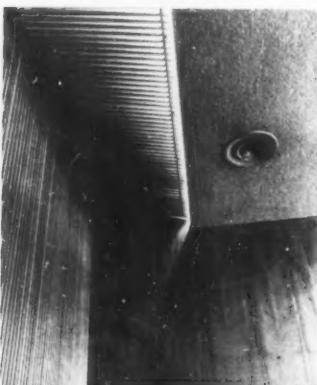
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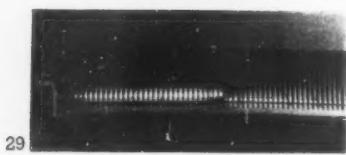
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short review, is as movable lattices to conceal fluorescent lights and other impedimenta in the ceilings of council and committee rooms, 28, 29. These are meticulously made and, to ensure that they can be aligned perfectly, are provided with screw gauges on the hangars. Whatever else may be said for this building, it provides that precision in its visible parts which modern architecture promised from the beginning but which is so rarely fulfilled.



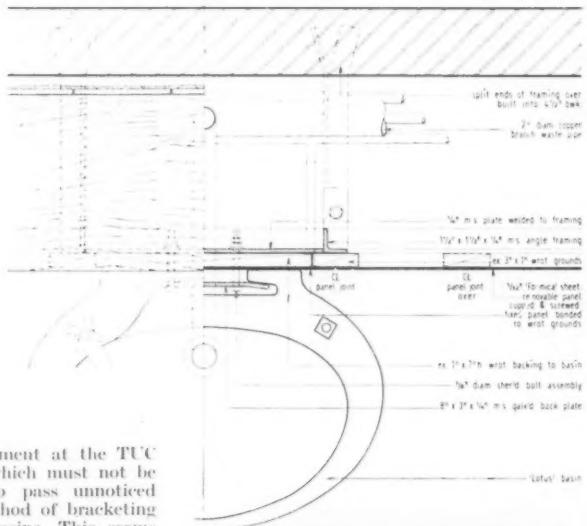
28



29

28, slatted screen to fluorescent lights in committee room. 29, slatted screen to fluorescent lights in council room.

## 4 THE INDUSTRY



### CONTRACTORS etc

**T.U.C. Memorial Building.** Architects: David du R. Aberdeen & Partners. Main contractors: Sir Robert McAlpine & Sons. Sub-contractors: Lead work, copings, gutters, balcony floors, cast lead fascias: Richard J. Audrey, Ltd. Hardwood block and strip flooring: Acme Flooring & Paving Co. Vitreous mosaic, pre-cast and in-situ cladding: Art Pavements & Decorations, Ltd. Automatic sprinklers: Automatic Sprinklers Co. Roofing, bi-metal light-weight roofs to special areas: Wm. Briggs & Sons. Metal work, staircase balustrades, railings etc.: Clark, Hunt & Co. Granite facings: Cooper, Wettern & Co. Light weight roof and floor screeds: Dohm Ltd. Cork flooring: Jos. F. Ebene (1953), Ltd. Strong room door: Hobbs Hart & Co. Double-glazed teak sashes: Holeon, Ltd. Copper work, wall cladding and special roofs: Holloway Metal Roofs, Ltd. Metal windows: Henry Hope & Sons. Facing bricks: W. L. Jackson & Co. Hardwood handrailings: F. J. Lewis, Ltd. Marble floor, marble walls and York stone work: Walter W. Jenkins & Co. Asphalt roofing, tiling, etc.: Limmer & Trinidad Lake Asphalt Co. Roof lights: Luxfer, Ltd. Roller steel shutters: Mather & Platt, Ltd. Plumbing: Smeaton & Sons. Steel lattice beams to special roof: Sommerville, Ltd. Terrazzo work to staircases: St. James' Tile Co. Metal work, bronze and armour plate balconies, aluminium and Pyrex rod screens, bronze windows: J. Starkie Gardner, Ltd. Light-weight demountable partitioning: Saro Laminated Wood Products, Ltd. Petrol interceptor and ejector plant: Tuke & Bell, Ltd. Plastering: solid, suspended and fibrous: Tomei & Sons. Suspended ceiling lathing: Universal Metal Furring & Lathing Co. Lifts: Waygood-Otis, Ltd. Marble work to walls: J. Whitehead & Sons. Mechanical engineering services: heating and ventilation, hot and cold water services: Benham & Sons. Electrical services: Rashleigh Phipps & Co. Painting: C. & T. Painters, Ltd. Paint suppliers: Hadfields (Merton), Ltd. Joinery and metal work, bronze and armour plate screens and doors, double-glazed teak sashes, timber coffers, etc.: H. H.

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#### Oil Firing Equipment

Clyde Fuel Systems Ltd.  
35 St. George's Square,  
London, S.W.1

#### V-Belt Drives to Fans

J. H. Fenner & Co. Ltd.  
V-Belt House, 54 Southwark  
Bridge Road, London, S.E.1

#### Thermal Insulation

Kitson's Insulations Ltd.  
Econite works, London Road,  
Barking, Essex

#### Satchwell Automatic Controls

The Rheostatic Co. Ltd.  
Slough, Bucks

#### "Tornado" Centrifugal Fans

Keith Blackman Ltd.  
Mill Mead Road,  
London, N.17

#### T.U.C. MEMORIAL BUILDING AIR CONDITIONING & HEATING

The ENGINEERS RESPONSIBLE to Messrs. J. Roger Preston & Partners, Architects, for the installation of the Air Conditioning Plants and all Heating, Hot and Cold Water Supplies of the new T.U.C. Memorial Building

**BENHAM & SONS LTD.**  
66 Wigmore Street, London, W.1

#### Ductwork

Benham & Sons Ltd.  
London, W.1

#### Embedded Ceiling and Floor Coils

Benham & Sons Ltd.  
London, W.1

#### Heater and Cooler Batteries

F. H. Biddle Ltd.  
16 Upper Grosvenor Street,  
London, W.1

#### Circulating Pumps

Holden & Brooke Ltd.  
Sirius Works, West Gorton,  
Manchester, 12

#### Centrifugal Fans

Davidson & Co. Ltd.  
Sirocco Engineering Works  
Belfast, N. Ireland

#### Recording Instruments

Negretti & Zambra Ltd.  
122 Regent Street,  
London, W.1

#### Air Filters (A.250 Multivee Filter Cells)

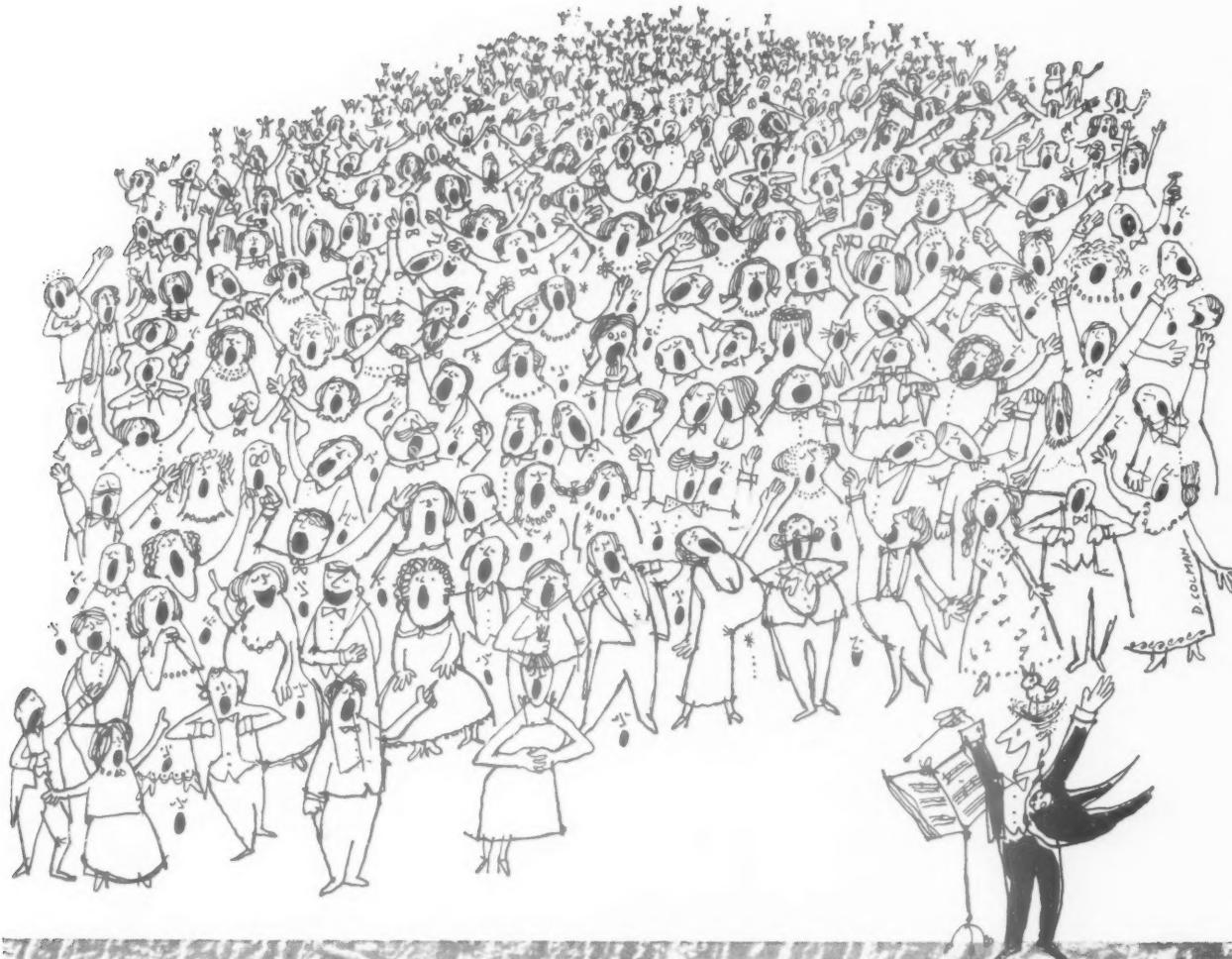
Vokes Ltd.  
Guildford, Surrey

#### Refrigeration

J. & E. Hall Ltd.  
Dartford, Kent

#### Ventilation Grilles

Air Conditioning & Engineering  
Aircon Works, (N.I.) Ltd.  
Laurelval, Tandragee, N. Ireland



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*The Gotham Company Limited, Gotham, Nottingham.  
The Carlisle Plaster & Cement Co., Cocklakes, Nr. Carlisle.  
Thomas McGhie & Sons Ltd., Kirkby Thore, Westmorland.*

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**Martyn & Co. Joinery, lift and wall linings:** George Parnall & Co. **Stone cills and copings:** John Fletcher & Dixons, Ltd. **Floor and wall tiling:** Carter & Co. **Roof monorails and travelling cantilever cradle:** Chamberlain Industries, Ltd. **Lightning conductors:** R. C. Cutting & Co. **Light-weight partitioning and acoustic tiling:** Firmin & Collins, Ltd. **Sprung floor:** Horsley Smith & Co. (Hayes). **Door furniture and ironmongery:** Yannedis, Ltd. **General joinery, doors and frames, linings to special areas:** R. Cattle & Co. **Double-glazed units:** Hollow Seal Glass Co. **Sanitary fittings:** Adamsez, Ltd.; John Bolding & Sons. **Pyrex glass rods (suppliers):** James A. Jobling & Co. **Collapsible gates:** Dennison, Kett & Co. **Steelwork to special roofs:** R. O. Wright & Co. **Formica facings to pipe duct enclosures:** Messrs. George Shimeild & Sons. **Fire fighting installation:** The Pyrene Co. **Double-glazed units (suppliers):** Pilkington Brothers. **Overhead cleaning monorails:** Palmer's Travelling Cradle and Scaffold Co. **Electrical incinerators:** The Hygienette Mfg. Co. **General telephone and speech reinforcement system:** Standard Telephones and Cables, Ltd. **Dictograph installation:** Dictograph Telephones, Ltd. **Oil firing:** Clyde Oil Fuel Systems, Ltd. **Oil storage tanks:** Horseye Bridge & Thomas Pigott, Ltd. **Valves:** Hattersley (Ormskirk), Ltd. **Radiators:** Crane, Ltd. **Rayrads:** Ideal Boilers & Radiators, Ltd. **Unit heaters:** Flexaire, Ltd. **Calorifiers:** Hartley & Sugden, Ltd. **Circulating pumps:** Holden & Brooke, Ltd. **Mixing valves:** Rheostatic Co. **Ventilating fans:** Davidson & Co.; Keith Blackman, Ltd.; Woods of Colchester, Ltd. **Motors:** English Electric Co. **Switchgear:** Brookhirst, Ltd.; Watford Electric & Manufacturing Co.

**Air heaters:** F. H. Biddle, Ltd. **Compressed air and controls for air conditioning:** Short & Mason, Ltd. **Air filters:** Vokes, Ltd. **Air washers:** Sturtevant Engineering Co. **Drain pumps:** Broadwall Engineering Co. **Thermometers and instruments:** Negretti & Zambra, Ltd. **Incinerator:** Heenan & Froude, Ltd. **Grilles:** Air Conditioning & Engineering, Ltd. **Anemostats:** Anemostate (Scotland), Ltd. **Refrigeration:** J. & E. Hall, Ltd. **Insulation:** Versil, Ltd. **Kitchen equipment:** Benham & Sons. **Switchboard:** English Electric Co. **Rising main switchgear:** William White (Switchgear), Ltd. **Underfloor duct system:** Key Engineering Co. **Fire alarm and clock systems:** Gent & Co. **Paper insulated cables:** W. T. Glover & Co. **MICC cables:** Pyrotex, Ltd. **VRI cables:** Crompton Parkinson. **Conduits and conduit fittings:** Wallsall Conduits, Ltd. **Switches and socket outlets:** Britman Electrical Co. **Lighting fittings and equipment:** Siemens Bros. & Co.; Holophane, Ltd.; Merchant Adventurers, Ltd.; George Forrest & Son; Associated Electrical Industries, Ltd.; Thorn Electrical Industries, Ltd.; Simplex Electric Co.; Troughton & Young, Ltd., and The General Electric Co. **PABX telephone equipment speech reinforcement system to conference hall:** Standard Telephones & Cables, Ltd. **Dictograph installation:** Dictograph Telephones, Ltd. **Paint to fair-faced concrete:** Jos. Freeman, Sons & Co. **Scandinavian opal glass light fittings:** Fredk. Thomas & Co. **Furniture:** Council Chamber and private offices: Heal & Son. **Lecture theatre:** Cox & Co. (Watford) Ltd. **Conference hall and dining room:** Dare-Inglis Ltd.

College of Further Education at Stourbridge. Architects: Frederick

Gibberd & Partners. **General contractors:** A. H. Guest, Ltd. **Sub-contractors:** Balustrades: T. W. Palmer & Co. **Bricks:** Henry J. Greenbam (1929), Ltd.; Himley Bricks Co. **Furnace chimneys:** Fredk. Braby & Co. **Door and cupboard furniture:** Parker, Winder & Achurch, Ltd. **Flush doors:** Southers, Ltd. **Glass domes and lantern lights:** Aygee, Ltd. **Electrical installations:** F. H. Wheeler & Co. **Roofing felting, damp-proofing and asphalte:** Neuchatel Asphalte Co. **Workshop paving:** Prodorite, Ltd. **Accotile and coktile flooring:** Neuchatel Asphalte Co. **False ceiling:** Anderson Construction Co. **Fibrous plaster:** David Esdale & Co. **Travelling crane:** Herbert Morris, Ltd. **Gantry and beams:** Westwood Dawes & Co. **Heating installation:** Rosser & Russell, Ltd. **Pressed steel monitor frames:** Lothian Structural Development, Ltd. **Pavement lights:** Lenscrete, Ltd. **Patent glazing:** Mellows & Co. **Internal plumbing:** W. H. Earley, Ltd. **Roller shutter:** Shutter Contractors, Ltd. **Reconstructed stone:** The Croft Granite, Brick & Concrete Co. **Sanitary fittings:** Dent & Hellyer, Ltd. **Slate:** The Humber Slate Works Co. **Glazed tiles:** Carter & Co London, Ltd. **Metal windows:** Williams & Williams, Ltd. **Paint:** Pergomazle, Ltd. **Floor and roof units:** Costain Concrete, Ltd. **Blackboards:** North of England School Furnishing Co. **Cycle blocks:** Stelcon (Industrial Floors), Ltd. **Terrazzo paving:** Venetian Flooring Co. **Glass furnaces:** Sismey & Linforth, Ltd. **Mesh screen:** Mountford Bros., Ltd. **Shutter gate:** Bolton Gate Co. **Infilling panels:** Plyglass, Ltd. **Prefabricated window panels:** A. H. Guest, Ltd. **Nameplates:** Hill Bros. (Service), Ltd.

Laboratories at Thornton, Cheshire. Architects: Frederick Gibberd &

Partners. **General contractors:** Gilbert-Ash, Ltd. **Sub-contractors:** **Flooring:** Prodorite, Ltd. **Roof decking:** William Briggs & Sons. **Partitioning:** Constructors, Ltd. **Shutter gate:** Potter Rax, Ltd. **Structural steelwork:** Scaffolding (Gt. Britain), Ltd. **Patent glazing:** Williams & Williams, Ltd. **Ironmongery:** James Gibbons, Ltd. **Lettering:** The Lettering Centre. **Slate coping:** Manchester Slate Co. **Terrazzo work:** A. Quiliggotti & Co. **Lifting tackle:** W. & E. Moore, Ltd. **Metal windows:** Aygee, Ltd. **Paint:** International Paints, Ltd. **Bricks:** Proctor & Lavender, Ltd. **Staircase:** Light Steelwork (1925), Ltd. **Glazed wall tiling:** The Stourbridge Glazed Brick & Fireclay Co.

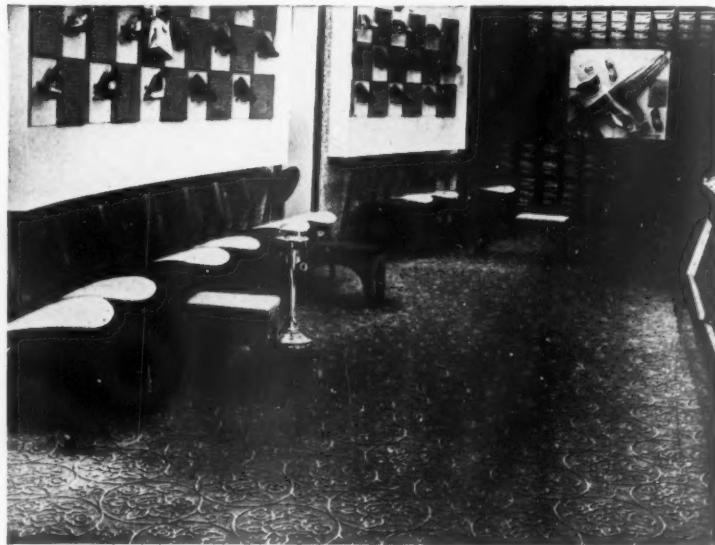
**Showrooms in Wigmore Street, W.I.** **Architect:** T. Ritchie. **Interior Designer:** Jonathan Green. **General contractors:** Higgs & Hill, Ltd. **Sub-contractors:** Electrical work: Johnson Pearce & Co. **Air conditioning:** Thermotank, Ltd. **Lighting fittings:** General Electric Co. **Plastic flooring:** Adamite Co. **Display construction:** F. W. Clifford, Ltd. **City Display Organization:** F. E. Ward (Hammersmith), Ltd.; Talbot Designs.

**The Garden Centre, Baker Street, W.I.** **Architect:** F. M. Gross. **Main contractors:** Russell Bros. **Building works:** Marshall Andrew & Co. **Plastic ceiling light fittings:** Luminated Ceilings Ltd. **Ceiling heating installation:** Building Installations Ltd. **Electrical installation:** J. H. Plant Ltd. **Illuminated signs and fascia letters:** L. Bloom, Pearray Ltd. **Suspended ceilings and fibrous plaster:** Thomas & Frediana. **Flooring:** The Limmer & Trinidad Lake Asphalte Co. **Florist:** Paul Temple.

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